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Mathematic games such as dominoes for primary number recognition, and addition and subtraction games such as milk bottle toss and baseball were tested. A list of several math problems, puzzles and brain teasers followed. Quiet games of paper cutting and cross word puzzles for math vocabulary are included.

The next section of games concerns language. These include spelling games, homonyms, writing ability, vowel sounds and book title games given at various grade levels.

Science games are intended to improve vocabulary and science reasoning. Music games given are a match game and a form of Old Maid using pictures of famous composers.

Games are given for library skills, mythology, Spanish and social studies.

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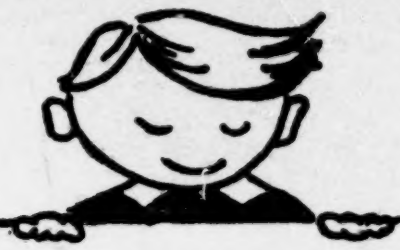

GAMES and PUZZLES

for the more able student

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G A M E S A N D P U Z Z L E S

F O R T H E

M O R E A B L E S T U D E N T

DEVELOPED BY ED X-180 - SPRING, 1963

Offered by San Jose State College

John Goldsmith, Instructor

Duplicated and made available to

school districts through the facilities of the

Office of Cupertino Union School District, Cupertino, California

Spring, 1964

F O R E W O R D

Educators enrolled in Education X-180, Enrichment Activities for the More Able or Gifted, contributed the following games and puzzles.

The games and puzzles are designed for the more able student but in many instances may be used by the entire class. All of the games and puzzles have been used successfully in classroom situations by the contributing educators.

The course was offered by the San Jose State College during the Spring of 1963. Mr. John Goldsmith, Principal in the Cupertino School District, was the instructor.

Appreciation is expressed to Ada Palmer and Elizabeth Pohl for the art work and to Dr. George Lovos, Director of Instruction for the Cupertino School District, and his staff for help in editing and printing the publication.

Below are listed the educators who were members of the class and contributed the games and puzzles found in this booklet:

Kay Andrist
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Sandra Carlson
Patricia Christian
Charlotte Clementson
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Helen Eastabrooks
Louise Eckert
Marion English
Ardis Gonzales
Elizabeth Goodman
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Lena Jagger
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Virginia Moritz
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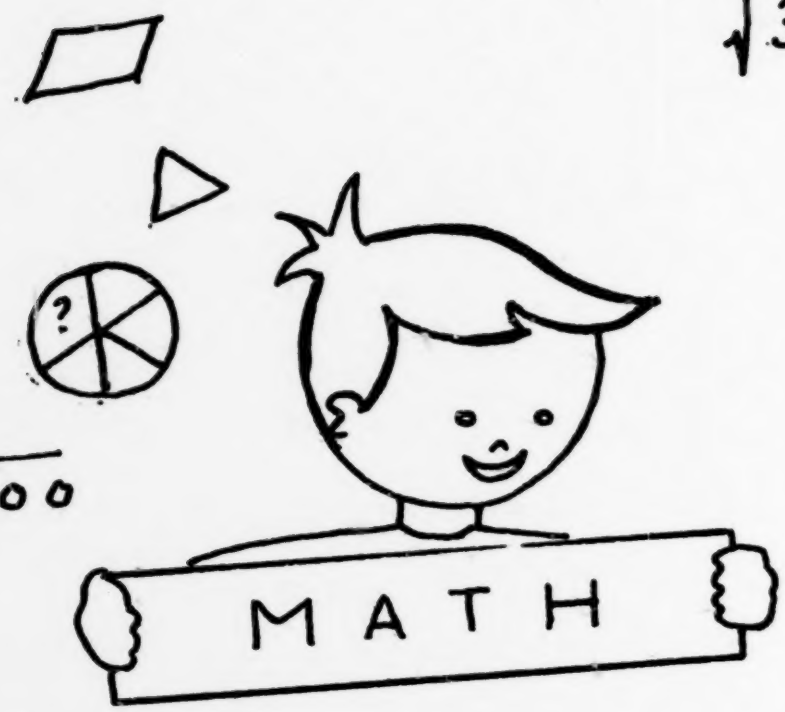


$$\begin{array}{r} 70654 \\ \times 6709 \\ \hline \end{array}$$

$346\overline{)7.00}$

$\frac{1}{2} \div 2\frac{1}{4} = ?$

$$\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array}$$

$6 \times n = 60$

$$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array} .$$

$4^3 \times 10^2 \times x = ?$

MATHEMATICS

ARITHMETIC GAMES FOR FIXING SKILLS

I. PRIMARY NUMBER RECOGNITION

Train Game - Children sit in small chairs placed in a row to make up the train. One child is the conductor who stands behind first child. A card, showing a number, is shown and if the conductor says it first, he retains his job as conductor. If a child who is seated says it first, he becomes the conductor and so on down the row.

Primary Numbers - Cut numbers from old calendars. Paste on small individual squares. Children can try to lay the numbers out in the proper sequence.

Calendar Game - Corners for photos are mounted on large tag board to hold the names of the days and the numbers which are written on uniform cards. These cards are cut slightly smaller than the spaces allowed for corners so the children may slip the proper days of the week and the proper number in place. This is made this way so it can be used the ten months of school.

Bouncing the Ball - Teacher bounces ball while children count to themselves. Child called upon to bounce ball remaining number of times needed to make a required number. Child who completes a combination may start a new one to be completed.

Dominoes - This involves matching of dots based on counting.

Guessing Game - Have a row of number cards in card holder. Have one child hide his eyes while you take out a number. Child guesses the missing number.

Ten Little Indians - The Little Indian song is sung as ten children, each holding a number card, step forward as their turns come. They step backward in the second verse as turn comes again.

Game of Fox and Chickens - Blocks to represent chickens on children's desks. Several pupils close their eyes while the fixes take chickens from them. At a given signal, pupils open their eyes and report how many chickens are missing.

II. ADDITION AND SUBTRACTION PROCESSES

Bean Bag Games - Provide experiences in reading and writing numbers and primary addition. In this game each player throws two bean bags at a target and his score is the total of the two throws. If the bag falls on a line, score the square in which the largest part of the bag lies. The game can be varied by changing the type of target from a flat floor target to boxes with compartments, or even waste baskets.

Gathering Acorns - Cut acorns six inches long from brown paper and paste calendar numbers on them and, with crayon, place the addition sign between: 2+5, etc. Scatter the acorns about the room. The children are squirrels gathering the acorns by giving the correct sum. Let each see how many acorns he can store away.

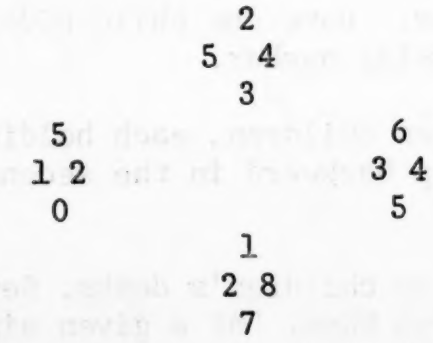
Fish Pond - Cut paper fish nine or ten inches long. Write or print, with India ink, number combinations thereon. Scatter the fish on the floor and let the children play they are fishermen. Giving the correct combination catches a fish.

Bean Bag Game - Children form a circle. Leader tosses a bag to a child and gives him a combination to answer. Teacher counts 1, 2, 3, 4, 5, slowly. Child catching the bag must answer before 5 is counted or he must go to the center. He may get out by answering another combination before the child who catches the bag next. As the child answers the combination correctly, he tosses the bag to the leader who, in turn, tosses it to another child, giving him a combination to answer.

Milk Bottle Toss - Get five or six pint milk bottles and six embroidery hoops. Put a strip of adhesive tape around the neck of each bottle, and mark on it values in points. Both plus and minus values may be used. Let the children attempt to toss the hoops over the bottles and keep the score.

Game of Baseball - Class is divided into "Reds" and "Blues". A pitcher from one side and a catcher from the other are chosen. The first batter from one side steps up to bat. Pitcher flashes combination before him. If the batter misses the combination the catcher may put him out by giving the correct answer. If the batter does not miss any of the three combinations flashed, he scores a point. Player from the other side is up next. Side with the highest score wins.

Baseball - Designate home, first, second, and third bases in the classroom. Child must answer the combination before leaving base. A chosen pitcher gives one of the combinations to the batter. If he answers, he goes to first base, where the first baseman gives him one of the combinations. He continues until home. If he misses he is out, and the next batter is up.



Baseball Game - Divide class into two teams. Each team has a captain who holds flash cards. Teacher is the score keeper. Designate home, first, second, and third in the room. Captain holds flash-card up for a moment. First member of the other team answers problem. If answer is correct, "Batter" advances to first. Problems missed count as outs; three outs and opposing team is up. Child continues on around the room as the other batters come up.

Guessing Number - Pin a number on back of a child. The other children give combination which makes this number. Have child tell his number. Each child has his turn.

Pussy in the Corner - The children form a circle with one as "IT". Two children hold same number which must not be greater than 18. Child in center announces 8 and 6. The two children holding 14 change places and the one who is "IT" tries to get the place of one of them. If he succeeds, the child who was supposed to get this place is now "IT". If he fails, he is still "IT".

MATHEMATICS

Dog and His Bone - The child who is chosen dog is seated in the center of the circle with closed eyes. Around him are scattered ten or twelve number combination cards. At a nod or given signal from the teacher or game leader, some child from the circle attempts to slip to the center of the circle and secure one of the number cards before the dog detects his presence. If the child secures a card and gives the sum thereon correctly, the circle scores; but, if he is unable to give the sum, the dog is given a try and, if he succeeds, he scores. If the dog detects a sound he barks to indicate that he hears, but his ear must be very keen or he may not be able to determine whether the sound is of an approaching player or some sound in the circle. If he makes a mistake in the location of the sound, he loses, the opponents score. The game proceeds until the dog has lost all his bones.

Fox and Geese - Fox in the center calls on someone in the circle (geese) for combination such as 3 and 2. If the answer is not given the goose is caught and joins fox in the center. Fox calls another combination. If the "caught goose" can answer before child in circle or if he makes a mistake, the "caught goose" can answer and escape back to the circle. This can be used for addition, subtraction, and also multiplication and division combinations.

King of the Castle - King sits on a "throne". Children of the court try to give him combinations to make him miss. If he misses he is dethroned and the one who gave him the combination, if he knows the answer, is the new king.

Breaking Through the Lines - Child tries to reach goal line without missing any combinations given by the guards who are stationed in lines between the pupil and the goal line. The guards give the child combinations as he comes to them.

Horse Race - Each child in the rows has a flash card combination on his desk. Be sure that he knows the correct answer. Choose as many children to represent horses as there are aisles. The combinations are the hurdles. At a given signal all the horses start. Giving the answers correctly allows the horse to proceed. If the answer is not correct the child holding the card stretches his hand across the aisle and the horse cannot pass until the answer is given. The horse completing the course first wins. Give each child in the row a chance to be the horse.

Climb the Ladder - Here a ladder is drawn on the blackboard by the teacher. Put a combination on each step, letting each pupil climb until he falls.

Firemen or Climbing the Ladder - All the children pretend that they are firemen, and they must rescue a child from the top story of a burning building. In order to save the child, they must climb to the top of the ladder and then down again without making any errors. On each step of the ladder may be an addition fact which needs drill, or you may play the same game using subtraction, multiplication, or division facts. You may also place emphasis of inverse processes by using addition to get to the top of the ladder, and subtraction combinations to get down again. All of the children can play this game at the same time if you have them write their answers on paper.

Hop Scotch - Draw the hop scotch on the floor with combinations in each square. Children may hop any direction. For every combination child gets correctly, one point is counted. If the child misses any, his score is rejected. Sides may be chosen and highest score wins.

MATHEMATICS

Cross Questions - This familiar game is very interesting. It may be played with addition or subtraction combinations. One half of the class is pitted against the other, a pupil leading off with a combination for the other side. If answered correctly and quickly, a point is scored. Now it is the other side's turn. Children failing, drop out, or a score is kept by the teacher.

Swallows, Larks, Robins - Children have numbers which are answers to combination cards on board tray. Children are divided into swallows, larks, and robins. A catcher with his cage is appointed. Caller calls "Larks". All larks match answers to combinations correctly and quickly. If not so matched, the catcher may take the lark to his cage. Have children exchange cards frequently. Call the other groups of birds.

Story Hour - Children make up story problems of their own, call on one of the other children for answer; child who answers correctly gets next turn.

Stepping Stones - Draw a stream with stepping stones so arranged that there are several different routes from one shore to another. Each stone will have a bombination written on it. Children choose routes and cross the stream by answering the combinations on the stones, being cautioned not to fall into the water by making a mistake. The children watching must be on the alert for mistakes.

Relay Race - Two groups of children race. Teacher writes combinations at each end of board. At a given signal first child runs to board and writes answer, then he adds a new combination. He then runs to his place and touches the second pupil in his line. This one goes forward and does the same. The line finishing first wins. If a child misses, someone else in his line must correct it. If he writes a combination which has not been taught someone must erase it and insert a correct one.

The Pony Track - Combinations are placed around the race track drawn on the board. One who answers (on paper) in the shortest time wins the race.

Review Game - Have children go to board and make all combinations which make 15, 16, 18, etc.

Sorting Mail - The sums are placed on the board or on a chart. Children sort out the various combinations from flash cards and place them under the correct answer. Example, one sum will be 12. The various pieces of mail are the flash cards. They are placed under the sum. In this case 8 and 4, 6 and 6, 10 and 2, etc., are placed under 12.

Blackboard Relay - In this game the class is divided into sections having equal numbers. The leader is given a piece of chalk. At the word of command he goes to the board and does the example assigned to him, returning to the next child when he has finished, and so on to the last. Correctness, neatness, and good order may be made factors in winning. Any errors in the work may be corrected by a succeeding player, thus keeping in mind not merely the work itself but also the formation of desired habits.

Play Mail Carrier - Children hold answers while others hold combinations. Ones with combinations deliver their "letters" to ones holding their answers.

Finding a Number - Arrange all the children in a circle except one, who is to sit or stand at the center. The child in the center announces the number that is to be the sum, for example 10. He then gives one of two numbers whose sum is 10. The children in the ring give in turn the number that must be added to the given number to make 10. When a child fails to get the correct answer, he takes a place in the center and at the same time the child in the center joins the ring.

Valentine Box - Any combination facts which are known are placed in the valentine box. Children take turns in taking them out and calling the answers. If answer is correct, he may keep the "valentine". Try for the largest number.

Combination Card Game - Set of combination cards. Teacher shows card and calls on a child for the sum. A correct answer allows him to have the card. One obtaining most cards may be teacher in the next game.

Chalk Tray Game--Combinations of any known arithmetic fact on chalk tray. One child at each end. Signal. Children write answer on board above combinations. One with the greater number of correct answers wins.

Christmas Stockings - Cut stockings from paper in all colors being sure each has a mate. Make stockins at least six inches long. Paste or stamp number combinations on each in such a way that each pair consists of two combinations that make the same number. The children find the mate to their stocking by color and by combination and pin them on the Christmas tree. The group chooses a game leader who decides when the combinations are equal. The Christmas spirit here is utilized to aid in number. Often at this time of year, the teacher feels there is too much excitement for the good of the work, but by use of the very interests they are so absorbed in, many valuable concepts are gained.

Combination Solitaire - Chart containing answers to combinations. Small combinations flash cards to fit chart, combinations on one side, answer on the other. Child answers a combination. Then he turns it over to see if he said the right answer. If correct he puts the card answer-side up in the proper rectangle on the chart; if the wrong answer is given, the child places the combination card with the combination up. At a glance he can tell which combination needs to be studied. To win, the child must get all of the answers right the first try.

Questions - The following questions are reproduced on cardboard strips. The strips are distributed. The child reads his questions or combination. He may choose someone to give the answer. This game can be played by a small group while the teacher is working with other children.

Larger or Smaller

1. Which is larger? A marble, A ball
2. Which is smaller? A bird house, A house

III. INTERMEDIATE NUMBER MULTIPLICATION AND DIVISION

Tenpins - Provides experiences in upper decade addition facts if you keep cumulative scores as in bowling. Play this game by rolling rubber balls, marbles, or sliding discs at the tenpins. These may be either wood pins, number cards rolled and fastened or wooden dowels.

Baseball Game - Divide the class into teams with nine players on each team. Have each player make a list of five arithmetic problems, giving each problem a rating of a base hit, double, triple, or home run depending on the difficulty of the problem in the eyes of the students. The team out in the field asks the team up to bat a question. If the player at bat answers it correctly he receives as many bases as the problem calls for, but if he fails to answer the problem he is put out. Each team gets three outs. The score is counted according to runs. This game will teach a student how to score a baseball game as well as improve his arithmetic while having fun. The teacher should draw the scoring chart on the board very large so all the students can see it.

Silent Multiplication Drill - Use two pointers. In the inner circle write the numbers of the tables you wish to use for drill. In the circle write the products, not in regular order. Divide class into teams and the leader of each team gets a pointer. Teacher points to six. Each tries to be first to touch the product of 4 and 6. Side who scores first gets the point and the pointers are passed on to the next person. If any player talks his side forfeits a point.

Arithmetic Match - Products are placed on the blackboard. Teacher gives multiplication facts. One from each team tries to point to answer on board first. Group having the greater number of points wins the match.

Simon Says - One pupil acts as leader. Each of the other players is numbered and takes the position of thumbs up. The leader says, "Simon says 15." The thumbs of 3 and 5 (factors) go down. Simon says "12" and 2,3,4,6, must go down. A penalty is given for failure.

Buzz or Just Buzz - This interesting game may be played either in or out of doors. Any number of persons may play it and there is a little mental work involved. The players all sit around in a circle. The game is started by one of the players saying "one". The individual next to him follows with "two" and so on around the circle until the number seven is reached. In this game, any number containing seven or any multiple of seven must not be given. The word "buzz" is substituted for all numbers containing seven. Seven should be "buzz", likewise 14, 28, 35, 42, etc. But 17 should be "one-buzz". When a player makes a mistake he has to drop out of the game and the one remaining the longest in the circle wins.

Spinning the Arrows - Circular cardboard with numbered arrow. Team game. Arrow spins. Pupil of one team fives product where arrow stops before opponent can.

Playing Fireman - Two ladders on which multiplication or division facts may be placed on rung. Have two teams. Each fireman races to the roof of the building by giving answers. Team having most firemen climbing correctly wins.

Multiples - Use any table. Card set with (example) 3 x 7 on one side and 7 x 3 on the other side. Twelve cards with answers, one side blank. Give one card to each player. One child goes to the front of the room and shows his card to the class as 3 x 7. Player shows a card with only answer on it, the child with the combination comes forward. Pupils watch for mistakes.

Number Fact Game - Children go to board and write as many number facts about a certain number as they can, as 12. 7 is 5 less than 12, etc. 4 x 3 is 12, etc.

Winging Wild Geese - Arrange the nine digits on the blackboard in an angle representing a number of wild geese in characteristic flight formation. Let the digits occur in random order and let the order be changed occasionally. As a bullet, use any number from 2 to 9. If the bullet is 7 the pupil wings the geese by naming in rapid succession the products 42, 14, 35, 36, 28, 21, 63, 7, 49. This game may also be used for division combination drill. Let the dividends be the geese while the divisor serves as a bullet.

```
      6
    2
   5
  8
 4
  3
   9
    1
     7
```

Telling the Whole Story - In the game the teacher says, "Tell me the whole story of 4 and 6." The pupil responds, "Four 6's are 24; six 4's are 24; 6's in 24 are 4; 4's in 24 are 6." Of course the language may be changed to suit that which the pupils have been taught to use with such combinations. This game may be used for written drills, also; the teacher dictating the combinations and the pupils writing the four forms.

Factors - A large number is given from which the object is to find as many factors as possible in a given time. For example, 820 or 480 may be given and the time limited to five minutes. The one finding the largest number of factors wins. The winner reads his list aloud, and anyone who discovers a mistake adds one to his score while the reader loses one from his.

Traveling - The pupils sit in their regular seats and two persons are chosen to start the game. The teacher gives the multiplication tables as rapidly as the two contestants can give the correct answer and are tied. As soon as one is ahead of his opponent and gives the wrong answer he moves to the next student in order. This is continued for any given period and the person traveling the most seats is the winner. The winner always moves until he is beaten at which time he sits down and the next player takes his place.

Game Relay - Five children for each team. Give each leading child a mimeographed sheet of ten problems which need written computation. Processes can be the same type or different. Each child does one problem and passes the paper back to the next child who in turn does a problem, etc. The last child does two problems and passes the paper back along the line so that all ten problems are completed when it gets back to the leader. The teacher reads the answers to the problems, and the children correct errors. Speed and accuracy are the criteria for winning. The teacher can make her own problems to fit the situation and the process.

Football - Draw a football field on the board. Place a digit at each of the yard lines. Divide the class into two groups or teams. Children take turns carrying the ball, which is represented by the multiplier, from the fifty yard line to the respective goals. If a child "fumbles" by giving an incorrect product, a member of the other team may "recover" by giving the correct answers in which case he will reverse the direction toward his own goal, until he makes a goal, or "fumbles".

IV. FRACTIONS

Combination Bee - Probably the most successful for the simpler problems dealing with

addition and subtraction of like fractions. The class lines up along the wall. The teacher asks one problem to the first child in the line. If he misses and the next child answers the problem, the two players exchange places. In a like manner, if three children miss the problem, and the fourth gets it right, he exchanges places with the first child who missed the problem. The object is to get to the head of the line and stay there.

Lowest Terms - In this game the teacher prepares cards on which fractions are written. The children add combinations (usually 2) of these cards in turn. If the answer is correct, but is not reduced to the lowest terms, the pupil gets one point. If it is reduced to the lowest terms, the pupil gets two points.

Baseball - Can be used in the fifth and sixth grades for addition and subtraction of like fractions and multiplication of fractions. The class is divided into two teams; each team has a scorekeeper who keeps score on the board. The four corners of the room serve as bases. As each geam member comes to bat, he must answer correctly three flash cards or he is out. If he answers correctly, he goes to first base, and the next batter is up. When three outs are made, the other team is up.

Around the Circle - Is useful for addition and subtraction of like fractions and multiplication of fractions. Fractions are arranged in the form of a clock face, and a fraction is placed in the center. The process indicated is carried on by a spin of a pointer, or pointed to with a pointer, and the center figure is combined, etc., with one on the outside circle. After some practice, reducing can give extra points to the teams involved.

Reference: Ravenswood City School District Curriculum Department

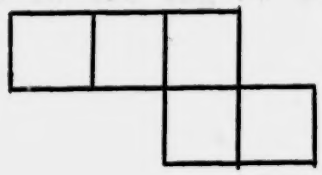
MATHEMATICS

PROBLEMS

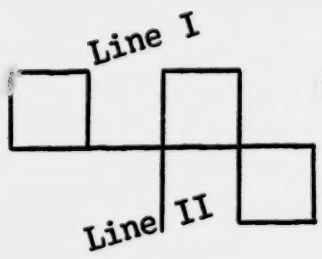
If a flyer flew 600 miles at a speed of 200 miles per hour and returned over the same distance at a speed of 400 miles per hour, what was his average speed for the round trip?

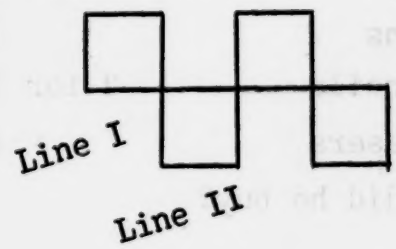
Solution: It takes $4\frac{1}{2}$ hours for the round trip and the total distance traveled was 1200 miles. The average speed for the trip was 266-2/3 miles per hour.

Move any two lines in the following figure and have only four squares remaining:



Solution:





A train one mile long is just entering a tunnel that is one mile long. The train is going 15 m.p.h. How long will it take the train to go through the tunnel?

Solution: At 15 m.p.h. the train moves one mile in 4 minutes, therefore it take 4 minutes for the train to get all the way into the tunnel, and 4 more minutes to get out. Total time 8 minutes.

You have a dollar to spend and you want to buy 100 items. At the following prices, how many of each item could you buy? Pencils 10¢, Erasers 5¢, and Paper Clips at 2 for 1¢.

Solution:

1	Pencil	.10¢
9	Erasers	.45¢
90	Paper Clips	.45¢
100	Items	$1.00

If a farmer had 39 haystacks in one corner of a field, 15 haystacks in another corner, 10 in another, and 5 in the last corner, how many haystacks would there be altogether?

Solution: Only one.

MATHEMATICS

If a group of soldiers are lined up as follows:

2 soldiers in front of a soldier
2 soldiers behind a soldier
1 soldier in the middle

How many soldiers are there in the column?

Solution: Three.

There is a frog at the bottom of a well 20 feet deep. The frog climbs upward 5 feet in the daytime, during the night it goes back to sleep and slips back 4 feet. At this rate, how many days will it take the frog to get out of the well?

Solution: Sixteen days.

Jack spent 25¢ for 25 articles priced as follows:

Paper	2 sheets for 1¢
Pens	1¢ each
Pencils	2 for 5¢
Erasers	5¢ each

How many of each did he buy?

Solution:

14 sheets of paper	7¢
8 pens	8¢
2 pencils	5¢
1 eraser	5¢
25 articles	25¢

A farmer sells chicken eggs, duck eggs, and turkey eggs. A customer wants to buy a total of 22 eggs. He has 22¢ to spend. Chicken eggs cost $\frac{1}{2}$¢ each, duck eggs cost 2¢ each, and turkey eggs cost 3¢ each. How many of each kind can he buy?

Solution:

16 chicken eggs	8¢
4 duck eggs	8¢
2 turkey eggs	6¢
22 eggs	22¢

Two farmers were taking their sheep to market and one said, "Give me one of your sheep, and I'll have as many as you have." The other replied, "Yes, but if you give me one of yours, I'll have twice as many as you have." How many sheep did each farmer have in the beginning?

Solution: One had 5, the other had 7.

How much is 9 x 8 x 7 x 6 x 6 x 4 x 3 x 2 x 1 x 0

Solution: Zero

On a book shelf are 4 books, each contains 247 pages. How many pages are between the first and last books?

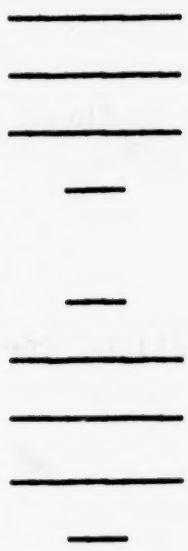
Solution: 494 pages.

To make sure his son did good work in arithmetic, a father told him one night that he would give him 8¢ for each problem he got right and deduct 5¢ for each one he missed. There were 26 problems on the homework assignment. The next evening the father asked his son how much he owed him. The son said nothing, it came out even. How many problems did the boy do correctly and how many did he get wrong?

Solution: 10 correct, 16 wrong.

Using the numbers 1 through 8 place them in the following figure in such a way that there are no two numbers in consecutive order in any direction either ascending or descending.

Solution:



A farmer was raising some chickens and some rabbits. A friend asked him how many of each kind he had. His reply was that he didn't really know, but between them they had a total of 60 eyes and 86 feet. Can you figure out how many rabbits and chickens he had?

Solution:

13 rabbits	52 feet	26 eyes
17 chickens	34 feet	34 eyes
	86 feet	60 eyes

How many calves at $5 each, sheep for $3 each, and lambs at $.50 can be bought for $100, the total number of animals to be 100.

Solution:

5	calves	$25
11	sheep	33
84	lambs	42
100	animals	$100

A man drove to a city four hundred miles away at an average speed of 40 miles per hour. On the return trip he drove at an average speed of 50 miles per hour. What was his average speed for the round trip.

Solution: Round trip took 18 hours to complete and 800 miles distance in all. Divide 18 into 800 to find average speed. (Answer, 44-4/9 miles per hr.)

If you had $50, spent $4.98, lost 6% of it, paid .90¢ to see a movie, spent 40% of it for Christmas presents and bought .50¢ worth of candy...how much money would you have left?

Solution: $20.62.

You have $10, you spent 18% for shows, 22% for some socks, 5% for cokes, and 40% for some records. How much cash do you have left?

Solution: $1.50.

If you earned $100 and spent $12 for shoes, 18% for clothes, put 45% in the bank, and lost a $20 bill...how much cash would you have left?

Solution: $5.00.

Write the following number: Four hundred eleven billion, one million, two thousand, eight hundred and eight thousand five millionths.

Solution: 411,001,002,800.008005

Write the following number: ninety-nine-hundred-thousandths.

Solution: .00099

A man sells a bottle and a cork for $1.10. The bottle costs $1 more than the cork. What was the cost of each?

Solution:

$1.05	for the bottle
.05	for the cork
$1.10	total

Al and Betty work evenings. Al is off duty every 9th evening, Betty is off every 6th evening. Al is off duty tonight and Betty is off tomorrow. When will they be off duty on the same evening.

Solution: Never.

What is the difference between a brand new dime and an old penny?

Solution: Nine cents.

A book worm begins at page one, volume one of a ten volume set of encyclopedias and bores straight through the pages and covers of the set to the last page of the tenth volume. If each cover is 1/8 inch thick and each volume has 2 inches of pages, how long is the hole bored? Assuming that the books are arranged together on a shelf as illustrated below.

Solution: $18\frac{1}{4}$ inches

Page 1
1st Volume

Last Page
10th Volume

George found a knife that cost $1.00 when new but was worth only .50¢ now. He sold it for .25¢. What was his per cent of profit?

Solution: 100% profit. He had nothing to start with, so everything he made would be profit.

A woman goes to a well with 2 jars, one of which holds 3 pints and the other 5 pints. How can she bring back exactly 4 pints of water?

Solution: Fill five pint jar and pour 3 pints to fill the three pint jar. Empty 3 pint jar back into well, pour remaining 2 pints in the 5 pint jar into the 3 pint jar. Fill 5 pint jar and pour 1 pint into the 3 pint jar to fill it, leaving exactly 4 pints in the 5 pint jar.

What number divided by itself is more than when multiplied by itself?

Solution: 1/2

Draw 3 rows of 3 dots each. Connect the dots with 4 straight lines without lifting the pencil.

Solution:

Two bicyclists, 20 miles apart, start riding toward each other at 10 miles per hour at 8:21 a.m., July 12, 1953. At the moment they start, a fly (trained, of course) on the front wheel of one bicycle starts flying in the direction of the other bicycle at the rate of 15 mph. He flies back and forth between the approaching bicycles until he is crushed by the wheels when the bicycles come together. Exactly how far did the fly travel?

Solution: It will take the bicycles 1 hour to come together, so the fly will travel 15 miles.

A farmer died leaving his entire herd of cattle to his 5 sons on the following conditions: Son John to get 1/3 of the herd; Son Tom to get ¼ of the herd; son Henry to get 1/6 of the herd; son Bill to get 1/8 of the herd; son George to get 1/9 of the herd. Of course the cattle could not be divided up the way the will specified, so a kind neighbor was called in to help out. The kind neighbor loaned two of his cows, and everything came out okay. Each son received his exact share of the cattle according to the will, and the kind neighbor took back his two cows after the division was over. How many cows were in the farmers herd and how many did each son get?

Solution: All the fractions add up to only 71/72, so there is one cow missing out of 72 cows. In order to have two cows left over there has to be 2x72=144.

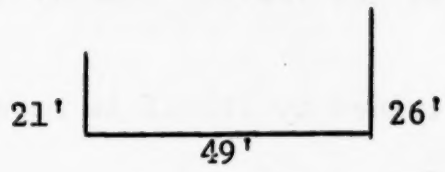
Original herd 142 + 2 loaned by kind neighbor, making 144.

John	1/3	48 cows
Henry	1/6	24 cows
Tom	1/4	36 cows
Bill	1/8	18 cows
George	1/9	16 cows
	71/72	142 cows

2 cows left over for kind neighbor

San Jose is a strange town. Two plots of land are adjacent to each other in the middle of a block. One measures 16 ft. by 8 ft., the other measures 49 ft. by 26 ft. by 21 ft. The latter is worthless, the former is valued at $10,000. Can you tell why this is true?

Solution: 49 x 26 x 21 encloses no area.



How much dirt is there in a hole 6'2" long, 4'3" wide, and 8" deep?

Solution: There is no dirt in a hole.

How many squares of any size are made by the lines of a standard checkerboard?

Solution: 204

Fill in the blank spaces in this multiplication problem:

```
      - - 7
        3 - -
    ---------
      - 0 - 3
      - 1 -
    - 5 -
  -----------
    - 7 - - 3
```

Solution:

```
   117
   319
  ----
  1053
   117
  351
 -----
 37323
```

Divide 32 into 4 parts so if you add 3 to the first part, subtract 3 from the second, multiply the third by 3, and divide the fourth by 3, the answer is 32.

Solution: (6)

```
6 plus three =  9
6 minus 3    =  3
6 x 3        = 18
6 divided by
          3  =  2
             ---
             32  total
```

Two players take turns selecting numbers between 1 and 10. The number selected is added to the previous total. The one who chooses the number which makes the total 50 wins. (First player to choose can win every time).

Solution: Key numbers to be on in order to win are 6, 17, 28, 39.

Note: The key numbers are eleven numbers apart, so if you get on any one of them it is impossible for your opponent to win, as there is no number from 1 - 10 that will stretch from 39 to 50.

An Arab directed in his will that his 17 horses be divided among his 3 sons, one half of them to the oldest, one third to the second, and one ninth to the youngest.

Solution: Impossible, under present conditions. A friend loaned them one horse then they made the division and he got back on his horse and rode off. The fractions add up to $8\frac{1}{2}$ ninths, so there is $\frac{1}{2}$ a horse missing, so in order to get one more whole horse this figure has to be doubled, which $8\frac{1}{2}$ plus $8\frac{1}{2}$ equals 17 plus one makes 18. Then 1/9 gets 2 horses, 1/3 gets 6 horses, 1/2 gets 9 horses, which totals to 17, so the friend gets on his and rides off.

A lady bought a hat with flowers on it for $10.00. If the hat cost $9.00 more than the flowers, how much did the flowers cost?

Solution: 50 cents.

MATHEMATICS

Which is better? Work 5 years - paid every 6 months.

A. Work for a year, then receive a $20 raise. This continues a $20 raise every year.

B. Work for a half year then receive a $5 raise. This continues, a $5 raise every ½ year.

Solution: (B)

Suppose you were offered a job and were offered one cent for the first day's work, double that or two cents for the second day, four for the third day, and so on for every day in the month. Would you take the job? How much would you have earned in 30 days?

Solution: (Yes) It would amount to $10,737,498.29

Ask someone to select his favorite number from the following row of digits: 1 2 3 4 5 6 7 8 9. Suppose he selects 8. You then reply that, as he is fond of 8's, he shall have plenty of them and accordingly proceed to multiply all numbers except the one he has chosen 123456789 by 72, the chosen number times 9.

A tramp makes his own cigarettes from the butts he picks up on the street. He finds that four butts make one whole cigarette. How many cigarettes can he smoke from a collection of sixteen butts.

Solution: (5) He makes four cigarettes from the sixteen, he then has four butts left from which he makes one more.

I always sit in the same pew at church, the third from the front and the seventh from the back, on the right hand side. Each pew seats 5 persons on each side of the center aisle. What is the total capacity of the church.

Solution: There are 9 rows, 5 persons on each side makes 10 people to the row, capacity 90 persons.

I plan to put a fence across the front of my yard which is 100 feet long. Fencing costs $5 for 10 feet. Posts cost $5 each, and I have to use one post for every ten feet of fence. What will be the total cost of the fence?

Solution: ($105.00) $50 for fencing, $55 for posts; need 11, one on each end and nine between them.

MATHEMATICS

In a certain tropical town, ten and a half inches of rain fell in a week and a half. What was the average daily rainfall over the period?

Solution: 1 inch. A week and a half is $10\frac{1}{2}$ days.

A ladder with rungs one foot apart is hanging over the side of a boat. At high tide the third rung is just below the water level. If the tide falls one foot, how many rungs are now clear of the water?

Solution: Two.

If it takes a clock 15 seconds to strike 6 o'clock, how long does it take to strike 12 o'clock?

Solution: 33 seconds. The time consumed is the interval between strokes. There are 5 intervals between the strokes of 1-6, a 3 second interval totaling 15 seconds. There are 11 intervals between 1-12 strokes.

A snail climbing out of a well advances three feet each day but slips back two feet each night. How many days will it take the snail to climb out if it starts 30 feet below the top of the well?

Solution: At the end of 27 days he has climbed 27 feet, and he climbs out on the 28th day.

A bookworm starts at the first page of the first volume of a three-volume work, standing in the usual manner on a bookshelf, and burrows by the shortest route to the last page of the third volume. If the pages of each volume are one inch thick, and the covers 1/8 of an inch thick, how far does the bookworm travel?

Solution: $1\frac{1}{2}$ inches. He goes through the pages of only the center book and four covers.

An architect was asked to design and build a square house with the window in each wall having a southern exposure. How did he do this?

Solution: He built it at the north pole.

The outer track of a phonograph record is 9 inches in diameter, and the unused portion in the center is 3 inches in diameter. If the record has 20 grooves to the inch, how far does the needle travel while the record is playing?

Solution: 3 inches. The needle just moves from the outside to the inside of the record.

MATHEMATICS

I drive at an average speed of 30 miles per hour to the station each morning and just catch my train. One morning there was a lot of traffic and at the halfway point I found I had averaged only 15 mph. How fast must I drive for the rest of the way to catch my train?

Solution: Impossible. It took him just as long to go half way as it usually took him to go all the way, so the train is just about to pull out already.

A train leaves Neartown for Fartown each hour on the hour, and the same arrangement applies for the trains from Fartown to Neartown. All trains travel at the same speed. If I travel from Neartown to Fartown, how many trains do I pass if the journey takes $4\frac{1}{2}$ hours?

Solution: 9 trains. Two trains starting from opposite points would pass each other every half hour and $4\frac{1}{2}$ hours contains nine $\frac{1}{2}$-hours; therefore, you would pass 9 trains.

If 7 maids with 7 mops sweep 7 tons of sand in 7 months, how long does it take 10 maids with 10 mops to sweep 10 tons of sand?

Solution: 7 months.

Mary had some little lambs, and so had her friend, Laura. If Mary gave Laura two lambs, they would each have the same number of lambs. If Laura gave Mary two lambs, Mary would have twice as many as Laura. How many lambs did each girl have?

Solution: Mary, 14; Laura, 10.

With six different colored paints, we can color each of the six faces of a cube with a different color. The colors can be arranged in various ways to make anumber of cubes which are different from each other; however we turn them around. How many different colored cubes are possible?

Solution: (30)

I decide to make a pile of paper. The paper I use is 1/100 (.01) of an inch thick. I first put down a single sheet. Then I double what I have put down, making 2 sheets. A second doubling gives me 4 sheets. A third doubling makes 8 sheets, or 8/100 of an inch. If I double the number of sheets thirty times in all, how high is the pile? 10 inches, 100 inches, 1,000 inches, 10,000 inches, 100,000 inches, or more.

Solution: More than 100,000 inches high. In fact, it is over 10 million inches (more than 100 miles) and will topple over long before it is completed.

Reference: Teacher Developed

MATHEMATICS

PUZZLES

Area: For the average and more able child from sixth to the eighth grade.

Purpose: To give the mind the extra activity for logical thinking.

How to:

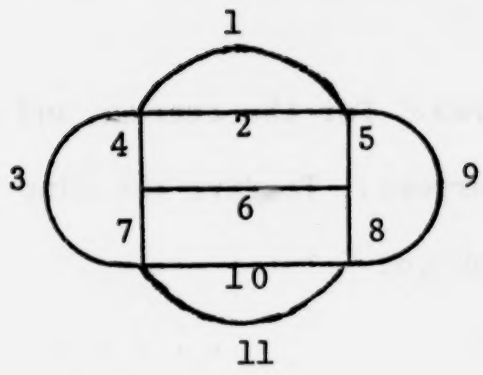
#1

. . . . .
. . . . .
. . . . .
. . . . .
. . . . .

Using this pattern of 5 rows of 5 dots each, make a cross by connecting the dots with a straight and continuous line, and have 5 dots remaining inside the cross and 8 outside the cross (dots not used in the making of the cross). The cross looks like this:

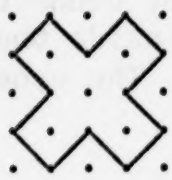
- - - -

#4 - Can you make this drawing in one continuous line, without lifting your pencil from the paper? (The numbers shown are merely for the purpose of determining the correctness of the answer, or for following a particular path described by an individual.)



Answers to puzzles Nos. 1-4

#1

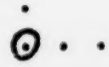


#2 One possible solution: Follow the numbers; start at 4-3-2-1-7-6-9-5

#3

(move this one to the corner)

Put this dot on top of the other dot, giving 4 dots in each row.



#4 - Start at line 5 and follow this path: 5-2-4-6-8-10-11-9-1-3-7.

Reference: Teacher Developed

MATHEMATICS

GAMES

Area: For the average and more able child from sixth to the eighth grade.

Purpose: To arouse the interest of children of this age group into more insight in playing a game or games that are more difficult.

#1 - I have used this game many times in my teaching, in classes, at parties, and so on. It is very simple to play, but requires good concentration by the participants. The more participants the better, but at least 20 should play.

The participants sit around in a large circle--or in rows as in a classroom--and number off (or count off). Player No. 1 sits in the first seat, the seat of honor; No. 2 is in back of him, No. 3 in back of No. 2, and so on. Player No. 1 starts the game by calling out any number; however, he cannot call a number beyond the number of players (if 15 are playing, 15 is the highest number he can call). The player whose number has been called immediately and without hesitation calls out another number. When a player's number is called, he or she must call the number of another player. The game continues until someone misses which he does by:

(a) calling his own number,
(b) not speaking, or hesitating too long,
(c) stuttering or not making clear the number he is calling,
(d) calling a "wrong" number--such as 23 when only 20 are playing.

To be effective, the game must move fast. One person must be the judge, to avoid arguments. When a person misses, he goes to the end of the line or circle and everyone above his number moves up one seat. Everyone then must concentrate on a new number, which can become confusing because the players will always be changing their numbers. Every time someone misses, those with higher numbers move up one. Now, the one in seat No. 1 is the leader -- the object is to dethrone the leader by making him miss. Players in the higher-numbered seats try to make the lower-numbered people miss so they can work up to No. 1. Player No. 1 usually concentrated so hard that he eventually says his own number; also, everyone puts pressure on No. 1.

The person who remains in seat No. 1 the longest or is in it at the end of the time allotted for the game is the winner.

After the players become accustomed to the game, the judge makes sure that the players' responses are fast, otherwise the game will suffer. In this way, the players miss every few seconds and will be moving around so fast their heads will swim! After a player misses, the others need a little time to renumber themselves (not aloud). A person in seat No. 20 can reach seat No. 1 rather quickly.

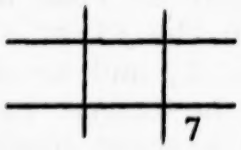
Try this game at parties. All adults and children will love it.

MATHEMATICS

Game #2 - This game is lots of fun and is played like tic-tac-toe, but instead of using X's and O's, you use the digits 1 through 9. Two can play, and no trick is involved in winning this game. The game follows the pattern of tic-tac-toe; one player, at his turn, uses any of the odd digits, 1,3,5,7,9, and the other uses even digits, 2,4,6,8. The one using the odd digits has an extra one and always goes first. The player who can make a straight row -- vertically, horizontally or diagonally -- add to the sum of 15 first wins. Naturally, each player tries to keep the other from scoring.

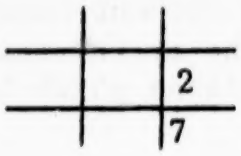
Example: A has 1,3,5,7,9
B has 2,4,6,8

The tic-tac-toe nine square diagram is used

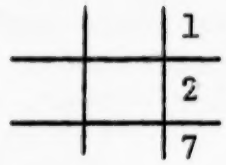


A goes first, using a 7. (A number can be used only once in the game.) Numbers 1,3,5, and 9 are left.

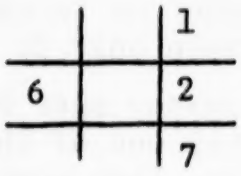
B places a 2, leaving 4,6,8



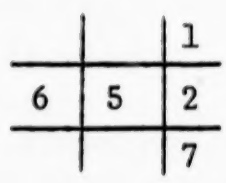
A blocks B by using 1 and prevents his using 6 on his next turn and scoring.



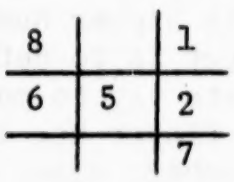
B plays a 6



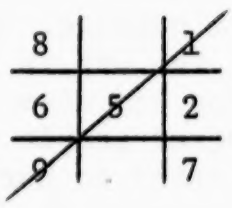
A plays a 6 in the middle square.



B plays an 8 to stop A from scoring.



However, A can still play his 9 and make 15 diagonally.



Therefore A wins.

Sometimes neither player wins or makes a sum of 15. Then the game ends in a tie. In the next game, A and B should change numbers, B taking 1,3,5,7,9 and A taking 2,4,6,8.

Reference: Teacher Developed

MATHEMATICS

ARITHMETIC GAMES - 3rd GRADE AND UP

Grade Level: 4th grade and up

Objective: To stimulate interest in drill.

Procedure:
1. Number of players, three to welve individuals, or the whole class.
2. One person is selected to be "It". He stands in front of the group or class and thinks of a number in a given range (e.g., 1-50) that can be divided by two different numbers (e.g.), 4 and 3, which he names.
3. Whoever guesses first the number he is thinking gets a point.
4. The teacher can be the scorekeeper.
5. The winner is the individual or the team with the highest score at the end of the playing period, or the individual or team that reaches a certain score first.

Grade Level: 3rd and 4th grades

Number of players: Three to fifteen

Materials: None

Procedure: Players sit in a circle or stand in a row. The children count by threes. The first one says, "three," the second one says, "six" and so on. After a "warm up," the word "buzz" may be substituted for all odd numbers or all even numbers or multiples of given numbers. Counting by fours, fives, etc., may be played in a similar manner.

Area: Arithmetic Golf

Materials Needed: Chalkboard, paper, pencil

Number of Players: Two or more

Procedure: While pupils lay their heads with their eyes closed on desks, teacher or leader writes a story problem on board. At the signal "Go" all boys and girls look up, read the problem, and begin to work. As each pupil finishes, he raises his hand. The leader gives the first person to finish one point; the second, two points; and so on. These represent the "strokes" taken to make the first "hole." Each pupil records his score at the left side of his paper. Those who cannot finish the problem in a reasonable time are given an arbitrary number of "strokes" larger than those of other members of the group. The problem is then worked by a pupil at the board. Those who had incorrect answers must add as many "strokes" to their scores as were given to those who did not finish. Nine "holes" constitute a "round". The player with the lowest score wins.

MATHEMATICS

Grade Level: 4th - 6th grades

Number of Players: Two teams of five to ten members each

Materials Needed: A collection of large flash cards with three or four decimal fractions on each one.

Procedure: This game could take the form of a race. There could be 10 laps to the race, and the team that answers 10 problems correctly first wins the race and the game. Teams supply individual contestants in rotation. If the contestant identifies the decimal that is the largest, his team advances one lap toward the goal of 10. If one contestant misses, the contestant of the opposing team has an opportunity to give the correct answer. If the second student misses, the first team has an opportunity to answer correctly, etc. This is continued until the correct answer is given. Student leaders write the contestants' answers on the board; they draw an "X" through any incorrect answers. They also keep a record of the laps completed.

Grade Level: 3rd - 6th grades

Name: Buried Treasure

Number of Players: Any number

Materials Needed: Graph papers bearing duplicated outline of Treasure Island (the points of the compass and a starting point should be marked), a score sheet with buried treasure properly located.

Procedure: The pupils are to measure a route to the "hidden treasure" (scale: 1 inch equals 1 mile). The directions could read something like this:

"Travel $2\frac{1}{2}$ miles east, 3/4 mile south,
$\frac{1}{2}$ mile east, 3/4 miles west, 1 mile
south, 2-5/8 miles south."

When the pupil comes to the end of the route, he cuts a $\frac{1}{2}$-inch square in his paper and fits the paper over the scoring sheet to see if he has found the "hidden treasure". (The "treasure" marked on the scoring sheet might be as large as 3/4 inch squares to allow for inaccuracies in measuring caused by working with a blunt pencil or warped ruler).

Each child in the class could make up an individual master for a treasure route. This way, the teacher could have over thirty or so buried treasure routes.

MATHEMATICS

Grade Level: 3rd - 4th grades

Area: Multiplication - Relay

Purpose: Better understanding of multiplication - Practice

Materials Needed: Scratch paper and pencil or chalkboard and chalk

Number of Players: One group studying Arithmetic

Procedure: Each row of participants is a separate team. Assign a multiplication combination to each row. Each child multiplies the answer of the child in front of him by the multiplication combination assigned to his row. On completion the papers should look like the illustration. To give each child practice with both large and small combinations, start the paper at the back of the row every other time. The teacher checks each team's work before declaring the winner for the day. Each row could be assigned the same multiplication combination, the first row to finish with the correct paper is the winner.

Illustration:

Row 1	Row 2	Row 3
1	3	2
x9	x5	x7
9	15	14
x9	x5	x7
81	75	98
x9	x5	x7
729	375	686
x9	x5	x7
etc.	etc.	etc.

Grade Level: 3rd - 6th grades

Name: "Batting Averages"

Number of Players: Two teams of approximately 9 players each

Material Needed: Two separate chalkboards and chalk for each player

Procedure: Each team is located at separate chalkboards, and a specific baseball position is designated for each pupil on both teams. Then the teacher says something like, "The shortstop is up; he got 12 hits out of 40 times at bat." The shortstops on each team figure this "average" as fast as they can, and the one to get the correct answer first gets one score. There is no score given if neither player is correct. The other players observe the mistakes but are to keep quiet and on their toes, as their positions may be called upon next. The same position may be called two or three times in succession to keep the game full of suspense and the team that gets 21 points first wins the game. A "world series" may be played to see who will take four games out of seven.

MATHEMATICS

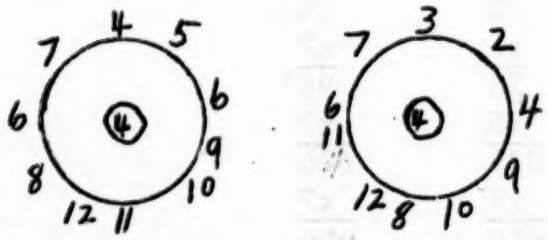
Grade Level: 3rd - 6th grades

Name: "Circle The Clock"

Number of Players: Two or more teams, each with not more than 6 to 9 players

Materials Needed: A chalkboard with as many circles on it as there are teams. The circles at the beginning of the game should have numbers written around the edge only. The number in the center, or the multiplier is written in later. Numbers are put in different order around each circle. Multipliers may be varied to meet the needs of each child playing the game.

Procedure: A pupil from each team goes to the board and faces the group. The teacher then writes in the multiplier. At a signal, the pupils face the board and write the product beside the outside numbers. After one minute or some other time limit, a signal is given and chalk is put down. Teams check the results. One point is given if a pupil's answers are all correct. Then the answers are erased and the multiplier is changed for the next group.



Reference: "Arithmetic Games"
by Enoch Dumas
Pearon Publishers,
San Francisco, Calif., 1956

MATHEMATICS

Games - 4th grade level

1. The Adding Wizard - Want to prove to your friends how fast you can add? Have someone look at a calendar and choose any week of any month, as long as it's a full week of 7 days. (Suppose the week of March 8 is chosen.) Have this person add the numbers of that week. As soon as you are told the number of the first day of the week you can come up with the answer first! 8+9+10+11+12+13+14 = 77

   Key: Take first number (8) and add 3.
   Then multiply sum by 7. (8+3 = 11x7 = 77)

2. I Know the Number - As your friend to do exactly what you tell him. When he finishes, he tells you his answer and you tell him the number he started with.
   (1) Choose any number.
   (2) Multiply the number by 6.
   (3) Add 12 to this product.
   (4) Divide this sum by 2.
   (5) Subtract 6 from the quotient.
   (6) Ask for the answer.

   Key: To get the original number, divide the answer by 3.

   *This is fun to play as "mental Arithmetic" with the class.

3. Age and Numbers - Ask someone to multiply his age by 3, add 6 to the answer, and then divide the sum by 3. Ask for the result. By subtracting 2 from the number, you will get his age. Try this trick with mother, father, sister, brother or friend. I'll bet it will even work with the principal!

Riddles - 3rd grade level

1. There are 12 - 1¢ stamps in a dozen. Then how many 2¢ stamps are there in a dozen? (12)

2. How many gum drops can you place in an empty quart bottle? (One. After that, the bottle is no longer empty.)

3. "Daddy," cried Billy. "I just saw a flight of jet planes go past."
   "How many did you see, Billy?"
   "Let me think. There were two jets before a jet, two jets behind a jet, and a jet in the middle."

   How many jets did Billy see? (3)

4. What's the difference between an old penny and a new dime? (nine cents)

5. When does 29 and 2 more equal 1? (April 29 plus 2 days equal May 1.)

6. An empty barrel weighs 10 lbs. What can you put in the barrel to make it weigh 9 lbs? (Holes)

7. A nine year old girl was getting ready to go to a ball game. As she was getting ready to select the socks she was going to wear, the lights went out. She knew she had only two colors of socks, white and blue, but how was she to know whether the socks she picked out would match? What is the least number of socks she would have to take out to be sure to get a matched pair? (3)

8. Father has $80 in paper money. He has the same number of $1, $2, and $5 bills. How many bills of each kind does he have?

9. How many times a day does a clock strike if it strikes only for the hours? (78 for 12-hour day, 156 for a 24-hour day)

Games - 5th grade level

1. French Multiplication - First, learn times tables through 5 x 5. From here on they can use their fingers. Suppose we ask one of these children the question: "8 x 9 are how many?" To find the answer he thinks "nine is 4 more than 5", and "Eight is 3 more than 5." Always he finds how much greater than 5 each number is. Then he bends down 4 fingers on his left hand and 3 fingers on his right hand. The number of fingers bent down on both hands gives the tens of the product: 4+3=7 tens. So the answer is 7 tens and some ones.

2. Number Magic -

(1) Think of the month of your birthday. (Example: January is 1, February is 2, etc.)
(2) Multiply that number by 2.
(3) Add 5.
(4) Multiply the sum by 50.
(5) Next, add your age.
(6) Subtract 365 for the number of days in a year.
(7) Finally, add 115.

The last two figures in the final answer tell the age; the first figures tell the month of the birthday.

Reference: Arithmetic Enrichment Bulletin, Sunnyvale School District

MATHEMATICS

MORE PUZZLES, GAMES, TEASERS

Grade Level: 4th grade and up

Objective: To review multiplication-addition processes

Name: Domino Magic

Procedure: Ask someone to choose any domino without a blank from a box of dominoes. Then ask him to do these things:

1. Multiply one of the numbers on his domino by 5.
2. Add 7 to the result.
3. Multiply the sum by 2.
4. Add the other number on his domino.
5. Tell you his answer.

Suppose he chooses the 6:3 domino. He multiplies one of the numbers by 5:

$$\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$$

He adds 7 to the result: $30 + 7 = 37$

He multiplies the sum by 2: $37 \times 2 = 74$

He adds the other number on his domino: $74 + 3 = 77$

Key: You should subtract 14 from his answer. The result is a 2-figure number made up of the two numbers on the domino chosen at the start.

$$\begin{array}{r} 77 \\ -14 \\ \hline 63 \end{array}$$

He chose the 6:3 domino.

Grade Level: 4th grade and up

Objective: To work on substitution

Procedure: Ten arithmetic words are written below. The letters in each word have been replaced by figures. Each figure stands for the same letter in all the numbers. Can you find the 10 hidden words?

240	TEN	6037	INCH
199	ADD	27544	THREE
0604	NINE	27659	THIRD
8165	PAIR	06042440	NINETEEN
8602	PINT	27652440	THIRTEEN

MATHEMATICS

Grade Level: 4th grade and up Name: "Missing Figures"

Objective: Practicing with multiplication tables

Procedure: Duplicate blocks similar to the ones below are passed out to pupils. Ask each pupil to work from left to right by rows in supplying the missing numbers, first for the series on one side, then for the series on the other side. Pupils may correct their own work since the answers appear on the reverse sides of the cards. This may also be offered as a timed exercise.

4		12		20
	28		36	
44		52		60
	68		76	

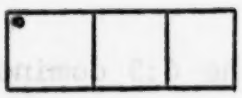
	8		16	
24		32		40
	48		56	
64		72		80

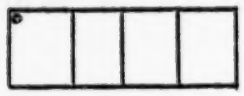
Grade Level: 4th grade and up

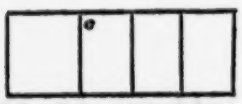
Objective: To recall mathematical terms

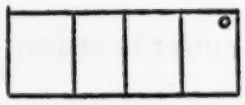
Name: "Scrambles"

Procedure:









See the letters NTE, UORF, FEIV, OZRE. Each set of letters can be moved around to make an arithmetic word - Ten, Four, Five, Zero. Use the letters TOFO that fall in the marked squares to make the puzzle word. The puzzle word is also an arithmetic word.

Reference: Teacher Developed

The King's Puzzle

Grade Level: 4th grade and up

Activity: A king, having grown tired of the incompetence of his twelve cabinet members, decided on a purge. "I am being advised by a group of fools," he addressed them. "You all seem to have served your pupose, but those among you that still have your wits may yet save your heads. Only those that solve my puzzle will see the light of the next day." With these words he had them thrown into separate cells, where each was given a copy of a puzzle. By dawn only one had solved it.

See if you can do as well as the lone survivor. Here is the puzzle: Using six straight line segments, draw a line through all of the dots below without taking your pencil from the paper.

. . . .

. . . .

. . . .

. . . .

The Two Women Selling Apples

Grade Level: 4th grade and up

Activity: Two women were selling apples at a market place. Each had 30 apples. The first woman sold her apples for a nickel each; the second woman sold her apples at three for ten cents. At the end of the day their receipts were $1.50 and $1.00 respectively, or a total of $2.50. The next day they decided to pool their same number of apples and sell them at 5 for twenty cents. At the end of the day, upon counting their receipts, they found they had only $2.40. They searched all about for the other dime, each thinking the other had it. Actually, both of the women were very honest. Neither of them was holding out. If this is true, however, what happened to the missing dime? Can you explain?

Reference: "Math Can Be Fun,"
by Louis Grant Brandes
J. Weston Walch, Publisher

MATHEMATICS

Subject: Arithmetic Words

Grade Level: 2nd and 3rd grades

Materials: Pencil and paper or chalk and chalkboard

Procedure: Start in any square and move in any direction to any square next to it. Continue one square in any direction until a word is made.

Y	T	W	H
A	T	E	C
R	I	N	C
N	O	P	U

1. count, inch, nine, ninety, one, once, pint, pound, ten, twenty, yard.

S	X	T	Y
I	U	R	E
F	O	M	E
H	D	Z	N

2. dozen, forty, four, fourteen, hour, more, six, sixteen, sixty, sum, zero

Reference: "Fun with Words," by Harold Larsen. Evanston: Row, Peterson, 1956

Fun With Numbers

a. Write a 1-place number, 5 or less.
b. Add a 1-place number to it. Try 6.
c. Subtract 4 from the sum.
d. Multiply by 9.
e. Cross out any digit in the answer.
f. Tell what number is left in the answer.
g. You subtract this number from 9.

The difference tells you the digit you crossed out.

Reference: Teacher Developed

Math Teaser

Purpose: To improve critical thinking

Materials: Paper, pencil

How to: Read and write answers

1. Suppose you decide to go to bed at 8:30 Friday evening. After winding the clock, you set the alarm for 9:30 the next morning. How much sleep would you get?

   Answer: Only one hour.

2. Mr. Brown owns a peacock. If the peacock laid an egg on the neighbor's lawn, who would own the egg, Mr. Brown or the neighbor?

   Answer: A peacock doesn't lay eggs.

3. A girl said, "I have as many sisters as brothers." Her brother replied, "And I have only half as many brothers as sisters." What is the least number of boys and of girls there could be in this family?

   Answer: Three boys and four girls.

4. A doctor's brother died. But the man who died had no brother. How could this be possible?

   Answer: The doctor was a girl.

5. Think of a number. Double it, add 10, and divide by 2. Then subtract the number first thought of. Try this with ten numbers. What is the answer?

   Answer: Five.

Fun With Numbers

a. Choose any two numbers, both even or both odd.
b. Add the two numbers.
c. Divide the sum by 2.
d. Find the difference between the original two numbers.
e. Divide this difference by 2.
f. Add the two quotients.
g. The answer is the larger original number.

Reference: Teacher Developed

MATHEMATICS

A Puzzle in Addition and Subtraction

1. Decide on any two numbers. Subtract one from the other. Also add the two numbers. Then add the two answers. What do you notice about that sum and one of the numbers you started with?

2. You can do this with any two whole numbers. Use 7 and 2. 7-2=5 7+2=9 5+9=14. Is 14 twice as large as the larger of the numbers 2 and 7?

3. Use 22 and 16 and try the same thing.

4. Use the numbers 26 and 13.

5. Use the numbers 38 and 25.

6. Use the numbers 29 and 14.

7. For Examples 1-6 we select two numbers. We _____ one number from the other. We _____ the two numbers. The sum of the answers is _____ the larger of the two numbers we started with.

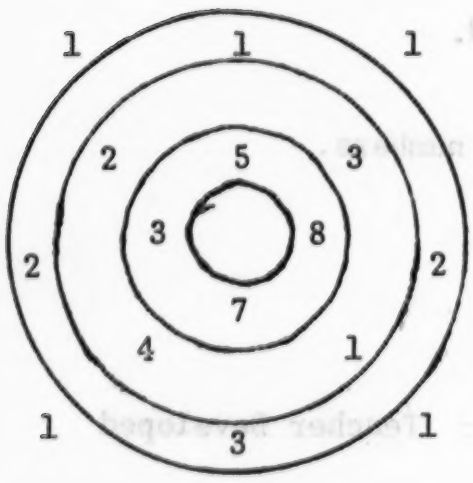
8. Now go back to Example 1 and see if you can explain why this puzzle works.

Reference: Teacher Prepared

Grade Level: 2nd and 3rd gardes

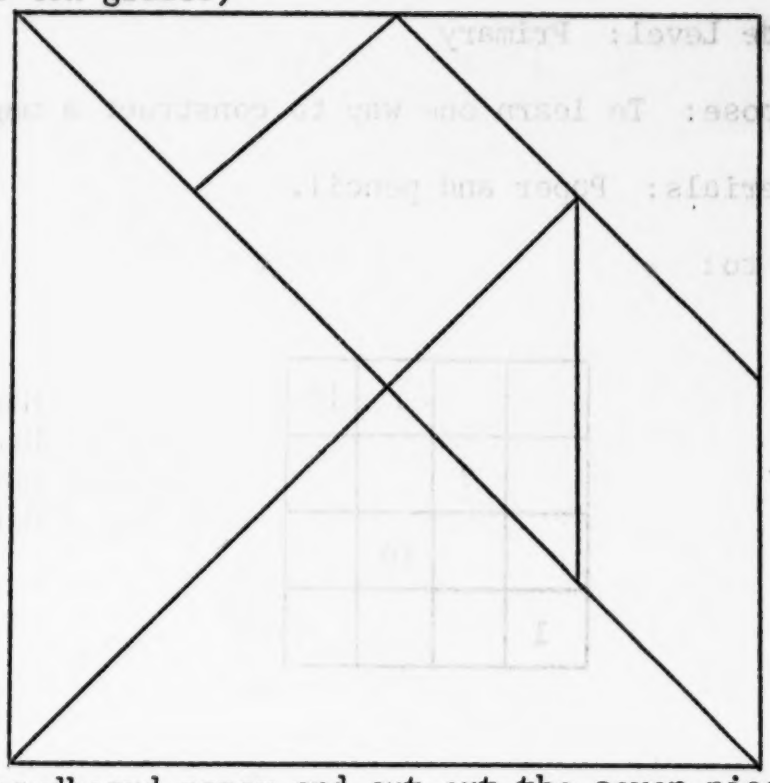
Materials: Pencil and paper or chalkboard

Procedure: Choose any four numbers, such as 5,8,7,3. Arrange them in order around a circle. Then subtract each number from any larger number next to it. Place these answers on a bigger circle. Put each answer between the two numbers subtracted. Do the same thing with the four numbers on the second circle that you did with the first four numbers. Place the answers on a still bigger circle. If you continue this long enough, a point is reached where the four numbers are equal.



Reference: "Nimble Numbers,"
by Harold Larsen,
Evanston: Row, Peterson, 1961

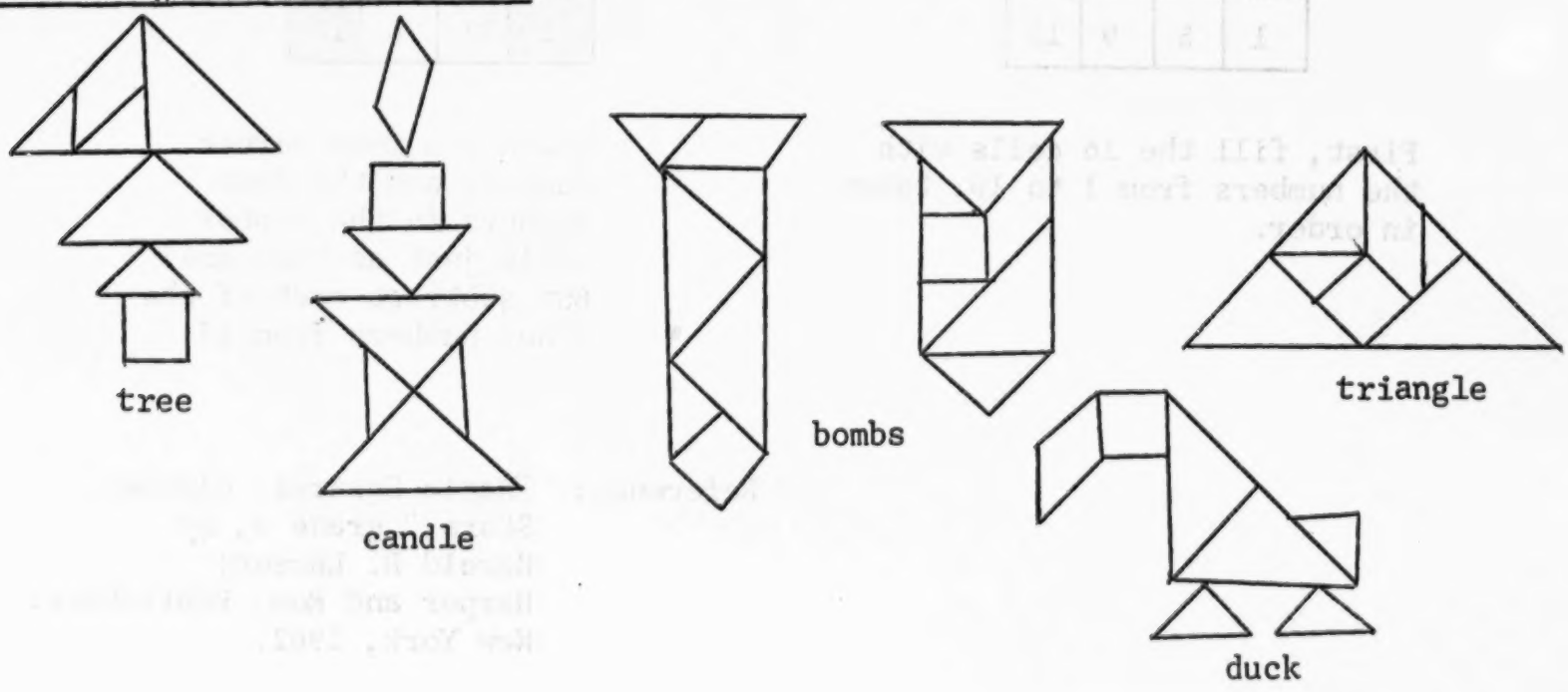
Tangram - Geometric Chinese Puzzle (3rd-4th grades)



Trace the drawing onto construction or cardboard paper and cut out the seven pieces carefully. These parts may be put together into an almost endless variety of shapes and figures. This is possible because of the many matching angles and sides to be found on the pieces. Notice, for example, that although the triangles differ in size, they are all of the same shape.

This is good in the lower grades to learn the names of certain polygons, to put them together to form other shapes. It can also be used as an art lesson to correlate geometry and art, by mounting the figures on paper.

Some designs that can be made:



Reference: Teacher Developed

Grade Level: Primary

Purpose: To learn one way to construct a magic square

Materials: Paper and pencil.

How to:

			16
	7		
		10	
1			

Magic 34 Square
Use each number from 1 to 16, but use each number only once. Each row plus the diagonals must total 34.

Comments and Suggestions:

4	8	12	16
3	7	11	15
2	6	10	14
1	5	9	13

First, fill the 16 cells with the numbers from 1 to 16, taken in order.

4	9	5	16
14	7	11	2
15	6	10	3
1	12	8	13

Leave the four corner numbers and the four numbers in the center cells just as they are. But subtract each of the other numbers from 17.

Reference: "Magic Squares, Circles, Stars," grade 5, by Harold D. Larsen; Harper and Row, Publishers, New York, 1962.

LANGUAGE—

LANGUAGE ARTS

Area: Language Arts

Purpose: Baseball spelling game is to stimulate improvement in spelling ability.

How to: Two baseball teams are chosen. Names may be selected for each team. A scorekeeper is also appointed. The bases and home plate are also indicated.

The boy or girl who comes up to bat can choose the type word he (or she) wants to spell: a one base word, a two "bagger", a third base hit word, and a home run word. The words given by the teacher increase in difficulty in relation to the base desired.

Each team has three outs. If one team mate chooses a three base word and misspells, the next batter has to spell the word already given. If this word is misspelled and there are three outs, the opposing team tries to spell this same word until it is successfully and correctly spelled.

Area: Language Arts

Purpose: To improve use of verbs; to stimulate use of vivid verbs.

How to: List possible verbs which can be used instead of the hackneyed, overworked verb <u>RUN</u> (WALK and SAY can also be substituted).

Activity: Use of microphone. Students are to create a vivid description using above "vivid verbs" in a description of a game (football, baseball, etc.) or an important event. This can be oral "broadcast" stressing clear diction.

Area: Language Arts

Prupose: To stimulate interest in words and to build a wide vocabulary. This is to encompass the basic meanings of words.

Material: Sheets containing the most common prefixes and suffixes. (SEE PAGE 38).

How to: This is highly competitive among gifted students. Prefixes and suffixes chosen have been carefully selected from above-grade-level spelling book.

Students are to take these in three stages:

"Blast-Off"	#1 to	5
"Second Stage"	6 to	10
"In Orbit"	11 to	15

LANGUAGE ARTS

Note: This sheet is used with preceding exercise.

Seventh Grade Spelling

PREFIX: Letters or syllables joined to a word - BEGINNING

SUFFIX: " " " " " " " - AT THE END

ROOT: Main part of the word

EXAMPLE: PREFIX: PRO -- before, ahead of, in front of
SUFFIX: ION -- state or act
ROOT: VIS -- to look
PROVISION: act of looking ahead

PREFIX

1. EX- -- out of
2. IN- -- in, into
3. TRANS- -- across
4. RE- -- again, back
5. DIS- -- not, reverse opposite of
6. SUB- -- under, below
7. DE- -- off, away
8. UN-) IN-) -- not
9. PRE- -- before
10. MIS- -- amiss, wrong, ill
11. INTER -- between
12. CIRCUM -- around
13. COM-) CON-) COL-) COR-) CO-) -- together
14. ANTI- -- against
15. POST- -- after

SUFFIX

1. -ITY -- state, quality, degree, condition
2. -ATION) -TION) -ION) -SION) -- state, action, result of an act
3. -ABLE -- able to able to be
4. -SHIP -- condition of act of being
5. -AL -- pertaining to
6. -IVE -- having the quality nature of
7. -MENT -- act of
8. -OR -- agent or doer
9. -FUL -- full of
10. -EN -- to make
11. -OUS -- full of
12. -NESS -- state of being
13. -ANT -- one who
14. -LESS -- without
15. -IZE -- to make

LANGUAGE ARTS

Area: Language Arts

Purpose: To stimulate interest in word building and to increase potential vocabulary.

Material: Work sheets

How to: Two sheets of paper are needed. On the top of one is printed the Latin word

DUCO (lead)

and on the other

DICO (say).

Possible score: fifty English words from each of these two Latin verbs.
Examples: abdicate, dictate, etc.
abduct, viaduct, etc.

Competition among students or between teams.

Area: Literature, reading

Purpose: To determine pupil's familiarity with well-known books.

Materials needed: None

Grade level: 4th and up

WHO AM I?

Each child chooses a character which he must describe briefly. The class guesses who is is. EXAMPLES:

1. I won a pair of silver ice skates. (Hans Brinker)
2. One day I fell down a rabbit hole. (Alice in Wonderland)
3. I got my friends to whitewash my fence for me. (Tom Sawyer)
4. I heard a cry in the corridor. (The Secret Garden)
5. My sidekick is named Dr. Watson. (Sherlock Holmes)
6. My boy friend's name is Laurie. (Little Women)
7. I raised guppies by the jarful. (Henry Huggins)
8. I have been spring-cleaning my hole in the river bank. (Wind in the Willows)
9. I found a hand of silver was better than a hand of iron. (Otto of the Silver Hand)
10. A boy named Alan tamed me. (The Black Stallion)
11. I swallowed an alarm clock. (Peter Pan)
12. No one believed me when I told them Narnia was at the back of the wardrobe. (The Lion, the Witch and the Wardrobe)

Reference: Teacher developed, though this is, of course, a common game, played in many forms.

LANGUAGE ARTS

Area: Spelling

Grade Level: 3rd - 6th grade

Materials Needed: Chalk and chalkboard

Naumber of Players: Whole class, or teams can be made up

Procedure: The teacher writes on the board the spelling words for the week in mixed fashion at different angles, etc. The children are given a couple of minutes to look these words over. Then they are to close their eyes and place their heads down on their desks. The teacher erases any number of words, usually starting with one and building up to 5 or 6. The children raise their heads and try to remember which spelling word was written where and which one has been erased. Later, when the group becomes quite skilled at this, the teacher can first ask the question, "How many words are missing?" Then the child who thinks he remembers all the words erased may spell each word correctly.

Password

Grade Level: 4th - 6th grade

Number of Players: Two teams; two players from each team work as partners.

Materials Needed: Small flash cards with words written on them (2 sets); one large flash card to match these sets so as to hold up for the class to see the mystery word.

Procedure: One member from each team receives the same word. Each member gives his partner a one word clue as to the identity of the mystery. Alternatin Alternating turns each team has the opportunity to gain ten points on the first attempt and 9 on the second attempt and so on. The team with the most points at the end of the game wins that day.

This game can also be used specifically with spelling word lists for the week.

Homonyms: Each child makes a list of as many homonyms as he can think of in five minutes. Five children go to the board and draw simple pictures of all the meanings of the homonym the teacher suggests. They then tell the meaning of their pictures, compare them with the other children's pictures or have the class guess the meaning from the picture. EXAMPLES:

scales:	fish scales	bank:	place to deposit money
	musical scales		river bank
	weighing scales		bank the airplane
	he scales the wall		the bank of a road
			piggy bank

Dictionary Fun

Use dictionary to define words used in the problem. Then place correct song title, book title, proverbs, etc., in the space provided. Once children catch on to the name, they can make up their own problems and inter-change among themselves.

Examples:

(a) Vertebrates that flit and have a common periphery, are continuously congregating.
   1. He who laughs last laughs best.
   2. Birds of a feather flock together.
   3. Never change horses in the middle of the stream.

(b) Refrain from numerating your domestic fowl prior to the arrival of the entire brood.
   1. Old MacDonald had a farm.
   2. Don't count your chickens before they are hatched.
   3. A stitch in time saves nine.

Spelling Game - Baseball

The teacher picks words for the intelligence of the general class. A word they use and should know would be a one base hit. A word one grade level above them would be a two base hit. A science word would be a three base hit, and a dictionary word would be a home run.

The class chooses sides, the teacher pitches the words and the class tries to write them on the board, each child having one minute to try to write the word he picks from the category he picks. Score one point for one-base hits, two for two-base hits, three for three-base hits and four points for a home run. The team with the most points wins.

Area: Research Skills - 4th grade and up

Objective: To stimulate interest in beginning encyclopedia work.

Materials: Question box, answer box, record for each child.

Procedure:
1. Teacher makes up encyclopedia questions on a variety of subjects, or on one specific area, and places in question box.
2. Child chooses a question, looks up answer, writes it on paper, puts name on both question and answer, clips them together, and places in answer box.
3. Teacher corrects the answer. If correct, child gets credit on his record sheet. Teacher keeps record sheet also.
4. The record sheet could be made out on the basis of the $64,000 Question idea. The first answer would put the child in the $64 block, the second answer would put him in the $125 block, and the amount would be doubled each time until the child got to the $64,000.

Beat the Author - All grades

Purpose: To develop an interest in wider reading; to develop ability to deliver a terse story summary.

Materials: Blackboard and student leader (editor).

How to: The student summarizes a book or story he has read; he may only employ four sentences. The class has three guesses to state the title and author of the book or short story. The Editor (student leader) awards either "The Class" or "Mr. X Author" one point each for the correct title and the author. "The Editor" designates a student volunteer to be "up" and represent "Mr. X Author" and summarize his book.

Comments & Suggestions: This basic game might also be organized with teams playing against each other. "Beat the Author" may be played at all grade levels.

Area: Language - all grade levels

Purpose: To develop an increasingly large vocabulary

Materials: Blackboard

How to: Divide the class into two teams. First players from each team advance to blackboard. Leader states problem, "Prefix meaning down from or away;" first team to write a word beginning with the prefix "de", such as decline, or depression, etc., is awarded a point.

Comments: The game might also be played with suffixes and roots. The following are some of the prefixes that might be used:

re	back	refer, reflex, revoke, retard
dis	apart from	dissect, distort, dissolve, disrupt
pre	before	precede, predict, prepare, presume
inter	between	intercede, intervene, interfere
intro	within	introduce, intramural, introvert
trans	across, beyond	transmit, transit, traverse, transfer
ab	away from	abnormal, abstract, abject
super	above, over	supersede, supervise, superintend
se	aside	secede, separate, secret
circum	around	circumvention, circumference, circumlunar
contra	against	contradict, contrast, controversy
non	not	nonconformist, nonstop, nonpartisan
ante	before	antecedent, antedate, anteroom
post	after	postpone, postscript, postwar
ambi	both	ambiguous, ambidextrous, ambivalence
vice	in place of	vice-president, viceroy, vice-consul
bene	well	benefactor, benevolent, benign
mal	badly	malnutrition, malformation, malign

(Note: As a reference book, the teacher might use: Practical Word Study, Form B, W. Powell Jones, Oxford University Press, N.Y., 1957)

A Beheading Puzzle (English game for 5th and 6th grades)

Area: Vocabulary

Purpose: Just for fun

Materials: Copy of exercise given to each pupil

How to: Pupil tries to get correct words by following instructions:

Take the first letter from the first word defined and have left the second word. For example, "Behead a spirit, have left one who entertains guests." (ghost - host).

1. Behead a dish; have left opposite of early. (plate - late)
2. Behead hot-water vapor; have left a group of players. (steam - team)
3. Behead a blossom; have left opposite of "raise." (flower - lower)
4. Behead a place for horses; have left a piece of furniture. (Stable-table)
5. Behead earth; have left circular. (Ground - round)
6. Behead talked; have left to punch. (Spoke - poke)
7. Behead a large blackbird; have left a column. (Crow - row)
8. Behead launders; have left burnt-out coals. (Washes - ashes)
9. Behead sprinkled; have left worshiped. (Sprayed - prayed)
10. Behead a meal; have left opposite of "outer." (Dinner - inner)

Alphabet Parts of the Body (5th and 6th grades)

Area: Spelling exercise

Purpose: Just for fun

Materials: Exercise copy for each pupil

How to: Pupil tries to answer quiz as given below:

Can you figure out what parts of the body the following are: Example: F plus a playing card (f + ace = face)

1. H plus a conjunction. (hand)
2. A preposition plus E. (toe)
3. N plus to feel pain. (nail)
4. H plus the atmosphere. (hair)
5. E plus Biblical form of you. (eye)
6. B plus a line. (brow)
7. T plus tall. (thigh)
8. To exist plus R. (liver)
9. To listen to plus T. (heart)
10. B plus water from clouds. (brain)

Word Square (5th and 6th grades)

Area: Spelling five letter words

Purpose: Just for fun

Materials: A copy of exercise given to each pupil

How to: Pupil follows instructions given with exercise below:

The words described below are five-letter words. Place them one under another, and they will spell the same down as across.

1. A raised place for the offering of sacrifices or the burning of incense, or for worship in churches.
2. To depart.
3. Long strip marked with a scale for measuring (plural).
4. To prevent.
5. Pauses.

A L T A R
L E A V E
T A P E S
A V E R T
R E S T S

Little Words in a Big Word (5th and 6th grades)

Area: Vocabulary

Purpose: Just for fun

Materials: Copy of exercise for each pupil.

How to: Follow instructions given below:

In the word Geography, find the following words. The number of letters in each word is shown in parentheses.

1. Strong cord (4)	1. rope
2. A musical instrument (4)	2. harp
3. To peel (4)	3. pare
4. A color (4)	4. gray
5. A hideous monster in fairy tales (4)	5. ogre
6. Another name for rabbits (4)	6. hare
7. A leaf of a book (4)	7. page
8. A brave man (4)	8. hero
9. Tiny opening in the skin (4)	9. pore
10. Any animal hunted by another animal (4)	10. prey
11. To ask earnestly (4)	11. pray
12. Part of a car (4)	12. gear
13. A fruit (5)	13. grape
14. Fierce anger (4)	14. rage
15. Cut in a meadow (3)	15. hay
16. A pile (4)	16. heap

"I" or "E" Puzzle (5th and 6th grades)

Area: Spelling

Purpose: Just for fun

Materials: Copy of exercise given to each pupil

How to: Follow instructions below:

Pairs of words are defined below. To form the second word, you must insert an "i" or an "e" in the first word. The blanks tell you how many letters there are in the first word.

Example: discover: - - - - a demon: discover: find a demon: fiend

1.	near: - - - -; the cry of a horse	1. nigh, neigh
2.	dainty: - - - -; opposite of nephew	2. nice, niece
3.	to live over: - - - - - -; to free from distress or pain	3. relive, relieve
4.	wearied: - - - - -; arranged in layers	4. tired, tiered
5.	possessive pronoun: - - -; one who inherits property	5. her, heir
6.	head cook: - - - -; most important	6. chef, chief
7.	to unite metals: - - - -; to use a weapon	7. weld, wield
8.	fear: - - - - - -; goods carried by train	8. fright, freight
9.	to stop: - - - -; calm or still	9. quit, quiet
10.	plural of man: - - -; look or manner	10. men, mien

Change a Letter Puzzle (5th and 6th grades)

Area: Spelling -

Purpose: Just for fun

Materials: Copy of exercise for each pupil

How to: Follow instructions; i.e., (Example: Cat to dog in 3 steps: cat, cot, dot, dog)

1) Can you change lose to find in 4 steps?
2) Can you change love to hate in 3 steps?
3) Can you change some to many in 4 steps?
4) Can you change rosy to pale in 4 steps?
5) Can you change hand to foot in 5 steps?
6) Can you change give to lend in 5 steps?

Answers:

1. lose, love, line, fine, find
2. love, hove, have, hate; or love, lave, late, hate
3. some, same, sane, mane, many
4. rosy, rose, pose, pole, pale
5. hand, band, bond, fond, food, foot
6. give, live, line, lane, land, lend

Reference: All preceding material teacher developed

LANGUAGE ARTS

Area: Spelling

Grade Level: 3rd grade and up

Objective: To stimulate interest in spelling

Procedure: Achieve a television or radio show atmosphere by the use of a public address system, live or fake. Once this is established, the children or the teacher may choose a child to act as the Master of Ceremonies. It is recommended that the teacher begin this activity to show the others how it is done. After the initial experience, many boys and girls will be eager to attempt it.

The Master of Ceremonies calls on one of the boys or girls and says, for example, "Bill, one of the words in our list means 'to put'. Can you spell it for five points?"

Bill answers, "Place. P L A C E."

Bill records his own score at his desk, and winners may be judged by the total number of points. The points may be varied according to the size or difficulty of the word attempted.

Area: Spelling (3rd grade and up)

Objective: To become familiar with words in the spelling list, and to further interest in spelling.

Procedure:

1. Two teams will play this game.
2. The teacher or leader will give a combination of two letters to the opposing team, and asks the members of that team to find a word in the current lesson using that combination of letters.
3. If the word given is correct, one point is given to the team answering correctly.
4. If more than one word is applicable and given in addition, one point for each additional word is given.
5. The teams alternate in the questioning after each point or group of points.

Reference: "A Teacher Aid to Better Spelling," by John F. Dean; Newport Beach, Calif., 1956

LANGUAGE ARTS

Area: Spelling (4th grade and up)

Objective: To practice spelling under stimulating circumstances

Materials: A large supply of 8½x11 paper similar to graph paper with ½-inch squares

Procedure: Ask the boys and girls to make up their own crossword puzzles by crossing words from the current lesson, starting with one word across the center of the paper.

```
  C
  R
W O R D S
  S       P
  S U P P L Y
          E
          A
          S
          U
          R
          E
```

Reference: "A Teaching Aid to Better Spelling," by John F. Dean; Newport Beach, Calif., 1956

Area: Language Arts (5th grade and up)

Objective: To stimulate interest in writing a composite story

Material: 12" x 18" manila paper

Procedure:

1. Combine different information gained in different classes to suggest a story.
2. For example: Start with words in the spelling list such as---thief, jewel, captured, hide-out, etc. In arithmetic you may be studying scale drawing; in science, the compass.
3. Set up the problem:
   a. Using a list of clues, draw a scale map, letting ½" equal one mile.
   b. Sketch the scene of the story, using fourteen words from the spelling lesson.
   c. Use the spelling words for captions on the scale drawing.
4. List on the board the basic clues.
5. Write the composite story using these basic clues.

Reference: "Tested Activities for Your Classroom, 384 More, Middle-Upper Tips," F.A. Owen Co., Danville, New York

LANGUAGE ARTS

Area: Language Arts - 3rd grade and up

Objective: To promote research and oral expression

Materials: A painting, a portrait, a book, or a picture of a famous artist, scientist, or musician

Procedure:
1. In one corner of the classroom have a poster on which is printed a large red question mark.
2. Place once a week a painting, portrait, picture of someone who is famous.
3. Challenge the children to find out what they can about it.
4. Hold a discussion once a week.
5. Guide the discussion and write on the blackboard names, dates, or other pertinent information which the children offer.
6. At the close of the discussion ask one child to stand and give a brief resume of what we have learned.
7. This keeps everybody on their toes.

Reference: "Test Activities for Your Classroom, 384 More and Middle-Upper Tips," by F.A. Owen Co., Danville, New York, 1957

Vocabulary Baseball (4th - 6th grades)

Activity: The teacher says, "We are going to play a vocabulary game." If you will look at the words below, you will see that they are arranged in groups of nine. Each time that a member of your team makes a perfect score on a word, we shall count it as a run. To make a perfect score it will be necessary for a member to 1) pronounce the word correctly, 2) to use it in a sentence, and 3) to tell what it means, 4) spell the word correctly. See how many points your team can win. You may use your dictionary before the game to look up the meanings of the words."

First Inning

ability	acquire	agreeable
abrupt	additional	ample
actual	adopt	anxiety

Second Inning

appearance	attitude	boast
arrest	authority	circumference
astronomy	benefit	suspicious

Arrange 9 lists of desired words in like manner. This activity may be carried on as a tournament, with winning contestants continuing or new teams chosen to give more a chance to play. Word lists can be varied in type and levels of difficulty.

Reference: Castro Valley School District Idea Fair - March 1963

Spelling Game (5th, 6th, 7th grades)

Purpose: Recreation, vocabulary building, encourage use of dictionary and glossary

Procedure: The teacher prints a word on the blackboard in column form; the first letter in on the first line, the second letter underneath the first, and so on. The same word is then printed backwards in column form opposite the first column. For example, the word "catastrophe" would look like this:

c	e
a	h
t	p
a	o
s	r
t	t
r	s
o	a
p	t
h	a
e	c

The children think of words beginning and ending with the letters that are opposite each other and write them. In the example, the first word might be "cake." The winner may be the first one finished, or the child who has the most words. The teacher or group may establish rules with regard to length of words which will be acceptable. Thus, three and four-letter words only may be used.

Reference: Castro Valley School District
Idea Fair - March 1963

Subject: Language and Creative Writing

Grade Level: 1st and 2nd

Materials: Magazine pictures showing interesting situations or cartoons without conversation.

Procedure: Each child writes a story about any picture he chooses. He must tell something that happened before and after the picture was taken. Children should "stretch their imaginations" in this activity.

Subject: Similar Vowels

Grade Level: 1st

Materials: Word Cards

Procedure: Prepare a set of about forty word cards. Each card should contain only one vowel sound. However, include words with many different sounds, such as sit, cake, bag, etc. Deal four cards to each player and put the rest of the cards in a pile in the middle. The first player reads one of his cards aloud. If a player holds a card with a similar vowel sound

(more)

Similar Vowels (cont'd)

he must give it to the caller. If the caller cannot read his card correctly, he must discard it and draw another card from the pile. He must then wait for his turn before calling for cards. The player with the least cards wins.

Subject: Initial Consonants

Grade Level: 1st

Materials: None

Procedure: I am an animal. I like to hang from a tree with my tail. My name begins with the letter "M". I have two syllables; what am I? The child who guesses gets to make up the next riddle.

Subject: Sentence Sense

Grade Level: 1st and 2nd

Materials: Cards or slips of paper with scrambled sentences.

Procedure: Each child gets the same number of scrambled sentences. The child who can write his in the correct order wins. He must read his sentences to prove that he has written them correctly.

Variation: Children receive cards or slips of paper with phrases on them. The children match them together to make good sentences. The child with the most sentences at the end wins.

Subject: Recognizing consonant blends

Grade Level: 1st

Materials: Word cards (word families); word cards (consonant blends)

Procedure: To half the class, the teacher passes out cards bearing consonant blends and to the other half of the class she passes out cards bearing word families. The children with the consonant blends walk among the other children to see if they can make a word by combining their cards. When a word is made, the children raise their hands and wait until the whole class is paired.

Variation: One set of cards bearing base words to which a suffix or prefix can be added. One half of the class will have the word cards bearing base words. The other half of the class will have cards bearing the suffixes and prefixes.

Reference: "Reading Skills," by Bernard Kingsley; San Francisco, Fearon Publishers, 1958

2

Subject Area: Spelling (3rd - 6th grades)

Puzzle Game - The teacher records on the blackboard ten words which have been misspelled during the week, on regular spelling lessons or in written work. An example of words taken from an actual classroom follows:

histericle	alphebetical	seive	emisary	recieve
dillatory	glossery	movible	eliptic	crediter
concist	phlem	cheif	captian	occurence

If a pupil knows the correct spelling, he at once records it; he consults the dictionary only when in doubt, or when the word may be unfamiliar, as, for example, emissary, riparian, and glossary. The pupil who receives the highest score wins. In case of a tie, the pupil, of those tied, whose paper is the neatest is the victor.

Vowel Game - The teacher writes on the blackboard a vowel and a word containing it. The pupils consult their dictionaries to find the correct pronunciation of the vowel in that word and then, without referring to the dictionary, they write as many words as they can think of which contain that vowel with the same sound. At the end of the time limit, the papers are exchanged to be corrected. In correcting, pupils check with their dictionaries and score one point for each correct word; two points off for each incorrect word. For example, if the teacher wrote "o as in nominal," the pupils would find in their dictionaries that it was short o and write lists such as jog, mob, probably, etc.

Reference: "Dictionary Games and Exercises," G.& C. Merriam Co.

Area: Literature; reading. (4th grade and up)

Purpose: To familiarize students with well-known and/or current book titles.

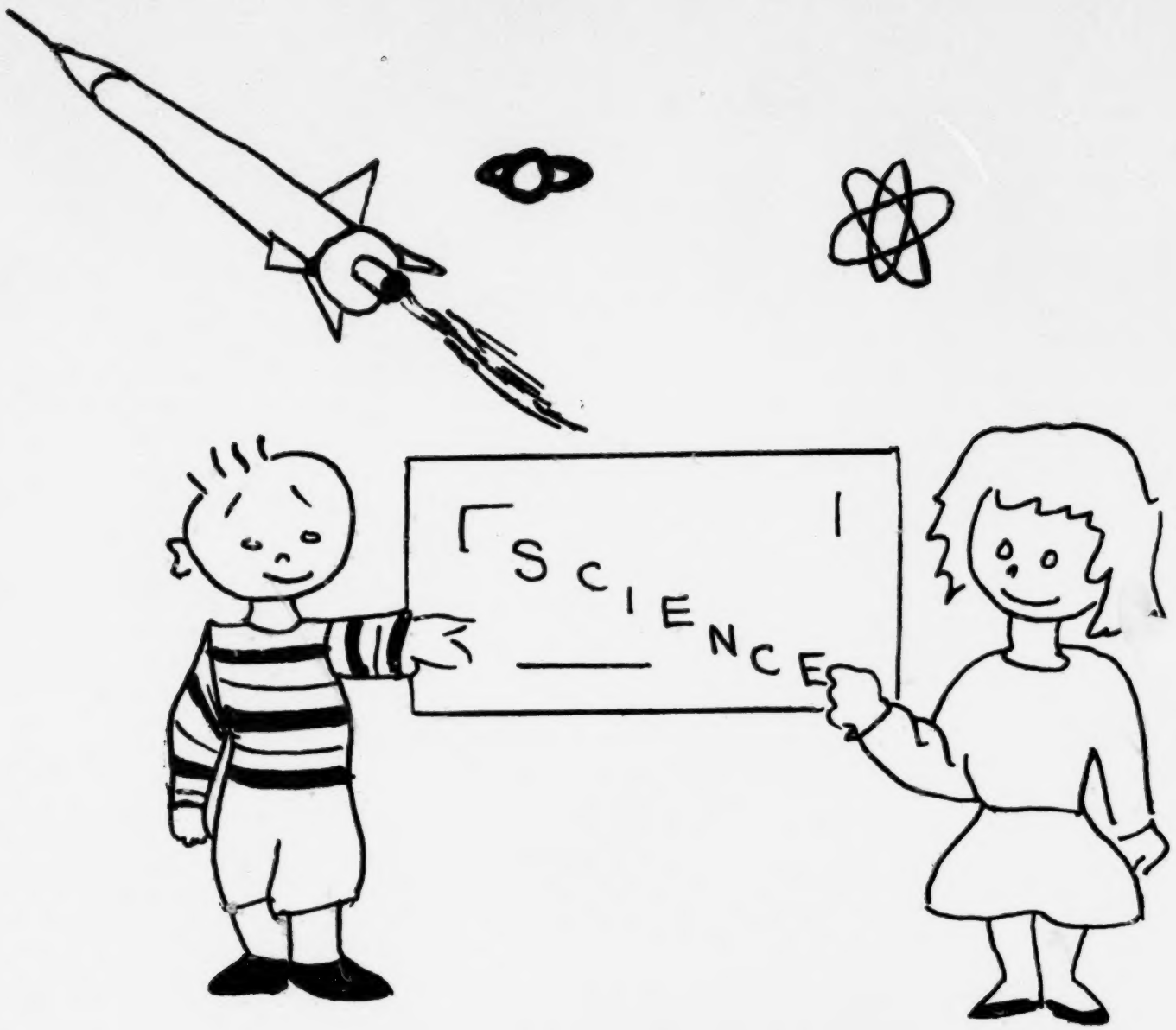
HOW MANY BOOKS?

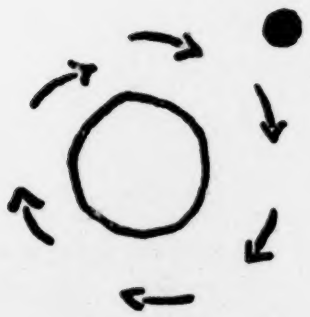
Underline all the book titles you can find in these paragraphs.

"It was a fine night for spooks and spirits and shadowy shapes. The threatening fog crept down the Mississippi as five boys in a cave fathered across from Indian Shores. Hi, Tom whispered Henry Huggins, as Tom Sawyer and this boy Cody crept up to join the group."

"Stories we liked when we were very young were Mother Goose rhymes and Johnny Crow's Garden. But now we are six we like easy puppets and magic. Edward, Hoppy and Joe lived through a tough winter in a little house in the big woods where they learned to enjoy the merry adventures of Robin Hood."

Reference: This idea was suggested by Phyllis Fenner in her book, "Our Library."


SCIENCE



Science Puzzler

Grade Level: 2nd and 3rd grades

Materials: Knife, fork, glass, table

Procedure: If you pluck one of the inside prongs of a fork with a table knife, you will hear nothing. But if you immediately press the end of the fork's handle against a table top, you will hear a distinct tone.

This is the basis of a delightful after-dinner trick, although it will take some practice. First, pluck the fork; then hold the blade of the knife over an empty glass. At the instant the knife is above the glass, your other hand slyly allows the end of the fork to come in contact with the table. Everyone will be watching the knife and will assume that the sound is coming from the glass. But when they try the trick, it won't work.

The tone actually comes from the table, which picks up and amplifies the fork's vibrations. Physicists call the phenomenon "sympathetic vibration."

For similar puzzles, see:
Gardner, Martin, Science Puzzlers,
New York: The Viking Press, 1960.

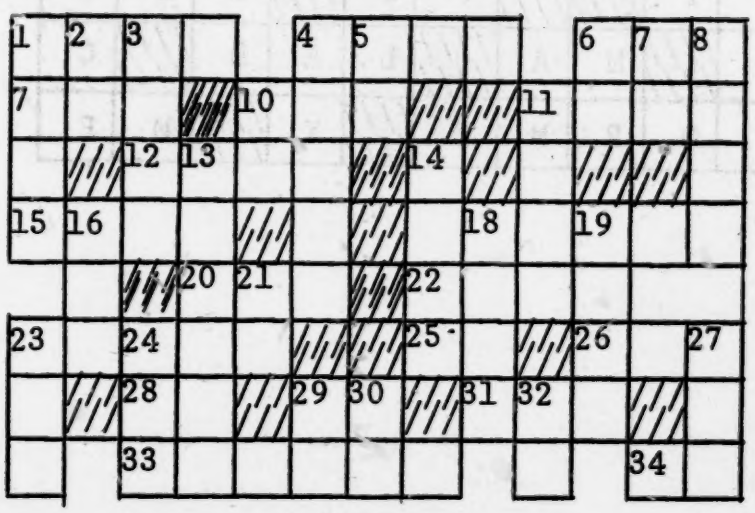
Weather Crossword

Grade Level: 4th grade

Purpose: To improve vocabulary and reasoning in science

Materials: Pencil

How to: Like any other crossword puzzle



WEATHER

Across:

1. Describing a summer day
2. This falls in winter
6. A haze
9. Girl's name
10. Owed or owing
11. Laughing sound
12. Press clothes
15. Finished
17. Long, pointed piece of ice
20. Speak
22. Performance by one person
23. Partly frozen rain
25. Toward

Across (cont'd)

26. Wreath of flowers (Hawaiian)
28. Note of the scale
29. Mother
31. Boy
33. Describing bad weather
34. Myself

(cont'd)

Weather Crossword (cont'd)

Down:

1. Breeze
2. Newspaper notice
3. Water from the clouds
4. Bright
5. Wind direction (initials)
6. Note of the scale
7. Exclamation
8. Very strong wind
10. To perform an act
11. Small round pieces of ice
13. To seat again
14. Very light rain
16. Fuel
18. Opposite of warm
19. Describing winter climate
21. By
23. Upper atmosphere
24. Overhead railways
27. Frozen water
29. Man's title (abbreviation)
30. Part of the verb "to be"
32. Sharp tool

SOLUTION:

W	A	R	M	■	S	N	O	W	■	F	C	G
I	D	A	■	D	U	E	■	■	H	A	H	A
N	■	I	R	O	N	■	M	■	A	■	■	L
D	O	N	E	■	N	■	I	C	I	C	L	E
■	I	■	S	A	Y	■	S	O	L	O	■	■
S	L	E	E	T	■	■	T	O	■	L	E	I
K	■	L	A	■	M	A	■	L	A	D	■	C
Y	■	S	T	O	R	M	Y	■	X	■	M	E

Music

Musical Game of Famous Composers

Make card game of pictures of famous composers. Make two cards of each composer. Play the game in the same way as "Old Maid" by asking for a match to one of your cards from the other players. Use a blank card for one extra card that can not be matched.

Send for card-sized pictures of famous composers to:

R C A Victor
Record Division
155 East 24th Street
New York 10, New York (large sheet of pictures, 10¢)

Pictures of Famous Composers:

1. Bach
2. Bartok
3. Beethoven
4. Berlioz
5. Bizet
6. Brahms
7. Chopin
8. Copland
9. Debussy
10. Dvorak
11. Elgar
12. Foster
13. Franck
14. Gershwin
15. Gluck
16. Gounod
17. Grieg
18. Handel
19. Haydn
20. Herbert
21. Kreisler
22. Liszt
23. MacDowell
24. Massenet
25. Mendelssohn
26. Moussorgsky
27. Mozart
28. Paderewski
29. Palestrina
30. Prokofiev
31. Puccini
32. Rachmaninoff
33. Ravel
34. Rimsky-Korsakov
35. Rossini
36. Saint-Saens
37. Schonberg
38. Schubert
39. Schumann
40. Sibelius
41. Sousa
42. J. Strauss
43. R. Strauss
44. Stravinsky
45. Sullivan
46. Tchaikovsky
47. Verdi
48. Wagner
49. Weber

Reference: Teacher Developed

A Musical Game

Match the musical term to the correct statement.

1.	Used on a bundle	Tie
2.	A place of residence	Flat
3.	A reflection on character	Slur
4.	Bottom of a statue	Base
5.	Used in driving horses	Lines
6.	An unaffected person	Natural
7.	What makes a check valid	Signature
8.	Oxygen and Nitrogen combined	Air
9.	Seen on the ocean	Swells
10.	What betrays nationality	Accent
11.	An association of lawyers	Bar
12.	Used in climbing	Staff
13.	Part of a sentence	Phrase
14.	Belonging to a fish	Scales
15.	Used in bicycling	Pedal
16.	A girl's name	Grace
17.	It never stops	Time
18.	Often passed in school	Notes
19.	Used in a store	Counter
20.	Necessary condition for surgical instruments	Sharp
21.	Remedy for fatigue	Rest
22.	By chance	Accidental
23.	A material that defiles	Pitch
24.	The name of one of Milton's poems	Allegro
25.	An army officer	Major
26.	Three times as much	Treble
27.	Strengthening medicine	Tonic
28.	To filter	Strain
29.	The stone that binds an arch	Key
30.	A person not of age	Minor

Reference: Teacher Developed

Library Skills

LIBRARY SKILLS

Area: Reference skills; use of various reference books

Purpose: To emphasize the type of material found in the various books

Grade Level: 5th grade and up

Materials: Bingo sheet. See form on next page.

Comments: This game can only be played after the children have had thorough grounding in use of the titles referred to.

REFERENCE BINGO

1. Each child has a Bingo sheet and a pile of colored paper squares.
2. Children fill in each square on the Bingo sheet with the name of a book taken from the list at the top of the sheet.
3. The teacher or librarian calls out identifying information about one of the books.
4. Children place a square of colored paper on what they think is the correct title.
5. BINGO may be called on 4 across
   4 down
   4 diagonal
   4 corners
6. When a child calls out BINGO, caller checks to be sure identification is correct.
7. The game may go on for double or triple bingo.

Reference: Designed by Lora Palovic, Librarian, Bishop Elementary School, Sunnyvale, California

Subject: Library Skills

Grade Level: 2nd grade

Materials: Cards from the card catalog or strips of paper with book titles

Procedure: After the class is familiar with alphabetical order and the rules of filing in the card catalog, they should try to put the titles in correct order. When two children next to each other have put their group in order, they can put their groups together in alphabetical order. Then they will join cards with another couple and so on until the whole group is working on one alphabetical sequence and all the cards are in order.

Reference: Teacher Developed

LIBRARY SKILLS

Sample sheet to go with REFERENCE BINGO described on preceding page.

REFERENCE PRACTICE Name_____

For BINGO, you may abbreviate the titles as underlined.

American Book of Days
Britannica World Atlas
Britannica Jr. Ency.
Britannica Book of the Year
California Place Names
Compton's Pictured Ency.
Famous First Facts
Global Atlas
Historical Atlas of U.S.
Information Please
Junior Book of Authors
Lincoln Library of Essential Information
National Geographic Index
Picturesque Tale of Progress
Spanish Dictionary
Webster's Biographical Dictionary
Webster's Geographical Dictionary
World Almanac
World Book Encyclopedia

Junior Book of Authors	Webster's Biographical Dictionary	World Book Encyclopedia	Information Please
Famous First Facts	American Book of Days	Britannica Jr. Ency.	Compton's Pictured Ency.
World Almanac	Calif. Place Names	Historical Atlas of U.S.	Lincoln Library
Spanish Dictionary	National Geographic Index	Globe Atlas	Britannica Book of Year

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LIBRARY SKILLS

Area: Reference skills; Dewey Decimal System

Purpose: To associate Dewey numbers with correct subjects

Grade Level: 4th grade and up

Materials Needed: Dewey Decimal Wheel*

Directions: This game can be played by individual children for practice in becoming familiar with Dewey classification. It can be played as an identification or guessing game with a group of children; or as a team game. As the wheel is turned, the children attempt to give the correct Dewey number to the picture exposed in the slot. Whichever team identifies the most pictures correctly wins.

*The Dewey wheel can be made as an activity by individuals or small groups of children. It can be made as simple or as elaborate as wanted. The bottom circle should be made up of pictures or drawings representing various Dewey Decimal categories. The pictures should radiate out from the center of the circle. Another circle, of the same size, should be superimposed on the first circle and fastened in the center so it will spin. A slot large enough to expose a picture from the lower circle should be cut in the top circle.

Reference: Teacher Developed

Area: Reference skills; locating a book in the library from information on the card catalog

Grade Level: 4th grade and up

Materials Needed: Two sets of duplicates of catalog cards, one set on white cards, one on blue. (Use author cards to start).

Directions:
1. Divide class into two teams, each with a captain, who is given a set of cards.
2. The captain gives the cards to couples on his team.
3. Couples locate desired book and pocket the card in book or (if book is out) put card between neighboring books at the proper place.
4. When time previously set is reached teams return to places to listen while librarian or teacher checks for score.
5. Scoring: One point is given for each correct placement one is subtracted for each error, the result giving the team score.

Reference: The School Library Association of California (Northern Section): Library Skills: Teaching Library Use Through Games and Devices. Fearon, 1958.

LIBRARY SKILLS

Area: Reference skills; the card catalog

Grade Level: 4th grade and up

Purpose: To emphasize the differences between author, title and subject cards

Materials: Two flannel boards.
Set of cardboard strips, seven strips to a set. There should be a strip for each of the following:

1. Author's name
2. Call number
3. Publisher's name; date of publication
4. Number of pages; illustrations
5. Subject
6. Book title. Book title should go on two strips for title card.

Directions: This can be played as a relay game. Divide the class into two groups. Hand the first child in each group a set of cardboard strips. At the word "Go" the first two children go each to a flannel board, and with the strips build an author card. When finished each child taps the next in line on his side on the shoulder and that child goes to the flannel board and changes the author card to a title card. Repeat for a subject card. The fourth child takes these strips off the flannel board, lays them aside and builds an author card with a new set of strips. Continue until one team has won.

Reference: Teacher Developed

Area: Reference skills; Dewey Decimal System

Purpose: To develop familiarity with Dewey numbers

Grade Level: 4th grade and up

Materials: A simple Dewey Decimal classification system

Comments: Inventive children will enjoy making up paragraphs of this sort to test on their classmates.

DECODING: Who can decode this paragraph most quickly?

"Many 923 are now living in 979.4, although they enjoy 910 in 940. Some have even gone into 915, but are very glad to be back in good old 973 where they can always get good 070, 641, and 796."

Reference: Fargo, Lucile F.: Activity Book Number Two: Library Projects for Children and Young People. American Library Association, 1945.

LIBRARY SKILLS

Area: Reference skills; Dewey Decimal System

Purpose: To associate Dewey numbers with correct subjects

Grade Level: 4th grade and up

Materials: 5 x 8 cards. Picture representing a Dewey number is pasted on one side of the card. The correct number is put on the back with a felt pen.

Directions: This game can be played like a spelling bee. Divide the children into two teams. Hold up a picture which must be identified by number. Or, reverse the process. Hold up a number and have a child say what subject the picture should refer to.

Reference: Teacher Developed

Unusual Fact File

Grade Level: 4th grade and up

Objective: To learn important information, and to stimulate interest in research.

Procedure:

1. Keep a filing box on the library table that is labeled "Unusual Facts."
2. When children discover surprising statements during research, they enter the statement on a card, giving the authority underneath.
3. The topic is listed alphabetically in the upper left hand corner, and the child finding the tip puts his name in the upper right hand corner.
4. When the children have their other work done, they will spend some time in hunting in the almanac, reference books, and encyclopedia for facts to add to the file.
5. Children also enjoy reading the cards.
6. Sometimes the cards can be used for a quiz game or shown in the opaque projector.

Reference: Tested Activities for Your Classroom, F. A. Owen Publishing Company, Dansville, N.Y., 1957.

Soar With Pegasus

On

Wings Of Fancy

MYTHOLOGY

Area: 7th Grade Literature

Purpose: To increase knowledge of Greek Myths and Legends

These MYTHOLOGICAL JUMBLE PUZZLES were developed by seventh grade literature class members.

The following books will be helpful to any child working with these puzzles. They are now available in paper bound editions:

Bulfinch, MYTHOLOGY, Crowell Publishers, N.Y.
Hamilton, MYTHOLOGY, Little Brown and Co., Boston.
Smith, Smaller Classical Dictionary, Everyman Lib.

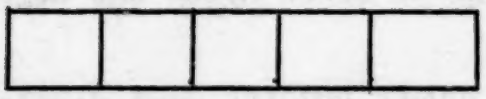
Instructions for working the puzzles:

Unscramble the letters following the clues given under each box line. You will find that the letters which fit in the shaded boxes will be used in the Key word at the top of the page. Each letter is used only once. There is a shaded letter for each box at the top of the page.

(Answers to Puzzles on Page 72)

.....

Jumble Puzzle



Sister of Pelops

Sesbrii

The girl who was Achilles prize of war

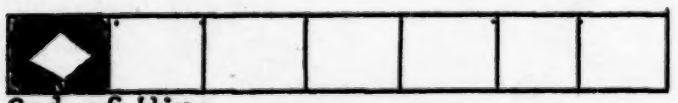
Arcohn

The boat master on the River Styx

Aeopru

The girl who was carried off to Crete
by a beautiful bull

Acbucsh



God of Wine

Rseisn

Women with sweet voices heard by Ulysses

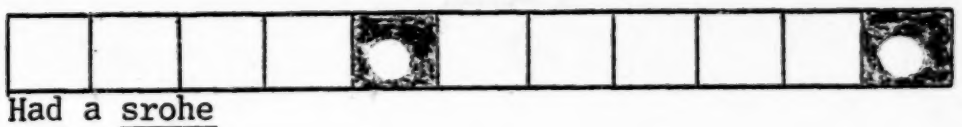
MYTHOLOGY

Jumble Puzzle

Unscramble the four jumbles, one letter to each square. Try to make words out of the jumbled letters. If you are advanced, try to solve the puzzle by covering up the bottom part of the page.

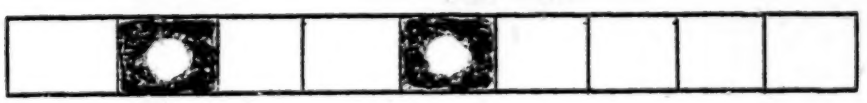
Key Word

Elrbolenrho



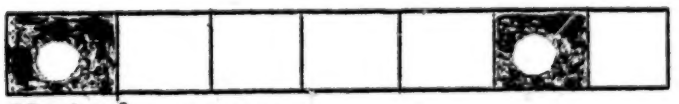
Had a srohe

Suiscsrna



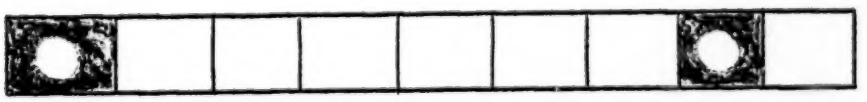
Died of veol

Norsoge



Slain by rseuesp

Psinothei



One of the rfieus

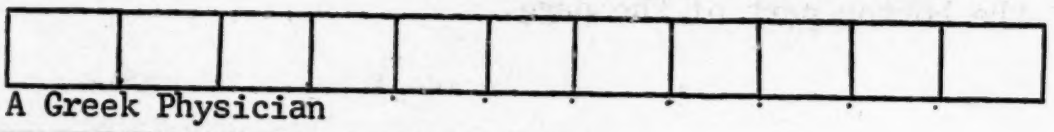
Clues:

Had a horse
Died of love
Slain by Perseus
One of the furies

MYTHOLOGY

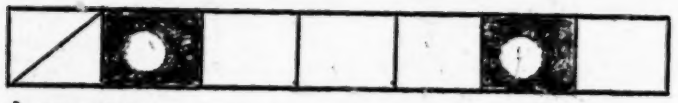
Jumble Puzzle

Unscramble the letters in the words below to find the letters to spell the Key word.



A Greek Physician

Nelhel

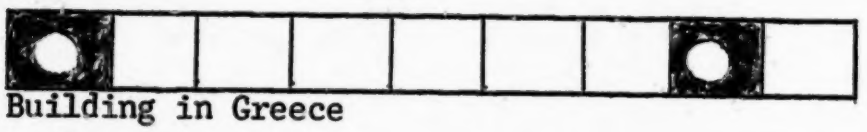


A woman

Eutepnt

Sea God

Nrpohaetn

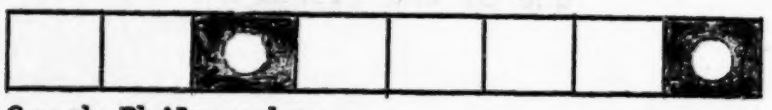


Building in Greece

Oionr

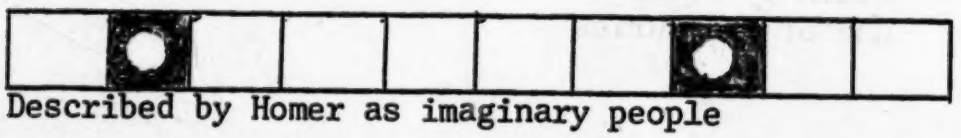
Mighty Hunter

Cotrseas



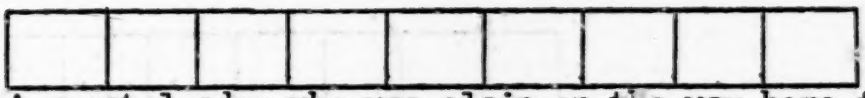
Greek Philosopher

Amcimeirns



Described by Homer as imaginary people

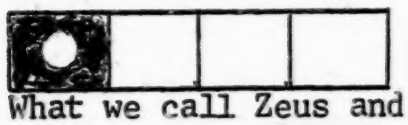
Jumble Puzzle


A great leader who was slain on the way home from war

Oxn

Goddess of night

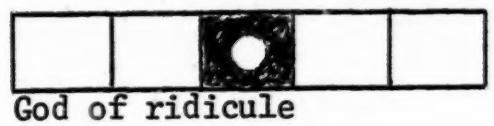
Sodg


What we call Zeus and Hera

Jaax

A Greek warrior

Soumm


God of ridicule

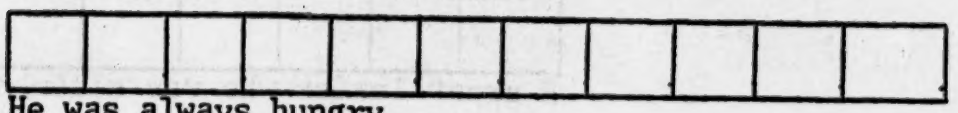
Merhes

Messenger of the gods

Nomis

King of Crete

Jumble Puzzle

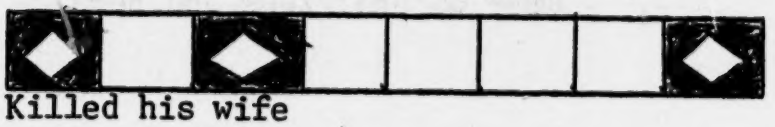


He was always hungry

Yees

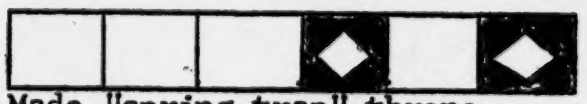
Argus had them

Rchuesel



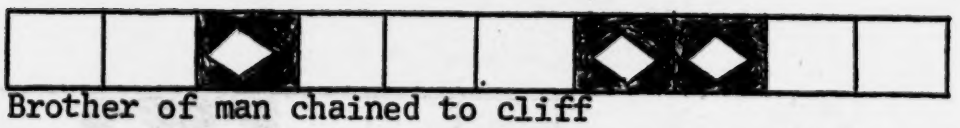
Killed his wife

Alvcan



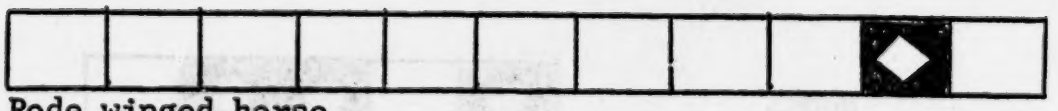
Made "spring-trap" throne

Ipmtteehsu



Brother of man chained to cliff

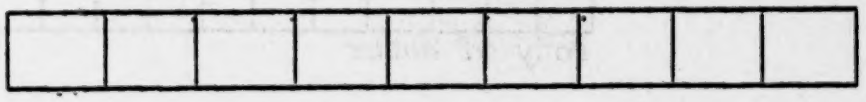
Lbelpnroohe



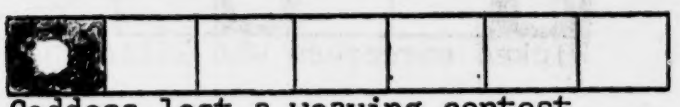
Rode winged horse

Jumble Puzzle

Unscramble the letters below in the six words. Find the marked letters which will fit in the letters for the Key Word.

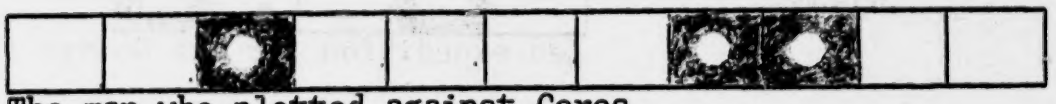


Inemrav



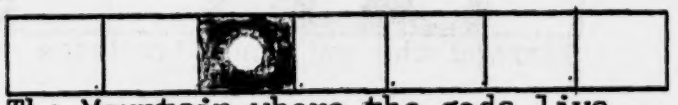
Goddess lost a weaving contest

Ihontyrecsh



The man who plotted against Ceres

Pylmaio



The Mountain where the gods live

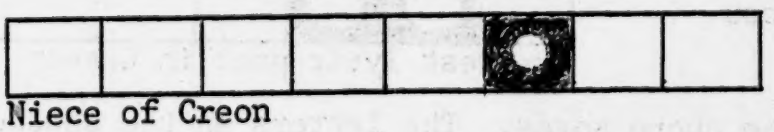
Mlonygpia

Woman Hater

Laaatge

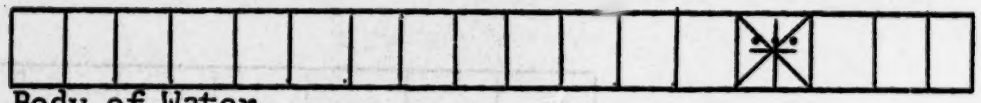
Perfect Statue

Gatineno



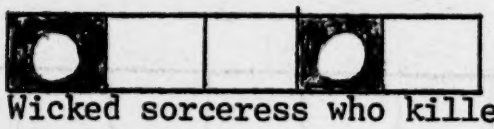
Niece of Creon

Jumble Puzzle



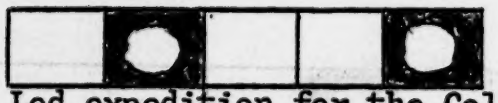
Body of Water

eedma



Wicked sorceress who killed her brother

njsao



Led expedition for the Golden Fleece

brcseeu

Guarded the entrance to Hades

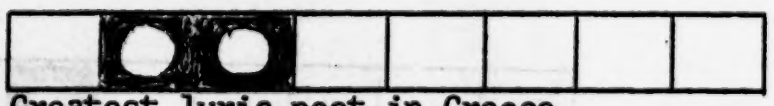
htciaa

Island in Ionian Sea--birthplace of Ulysses

hdrsoe

Island in Agean Sea--location of Colossus

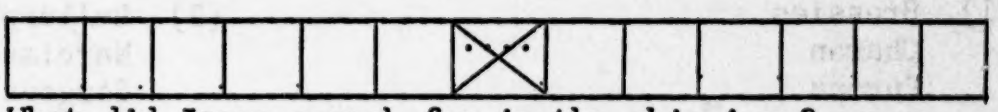
dnrpiasu



Greatest lyric poet in Greece

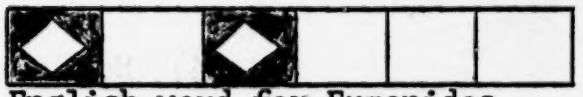
(Unscramble the above words. The letters in the shaded boxes will make the Key Word.

Jumble Puzzle



What did Jason search for in the ship Argo?

rsfeui



English word for Eumenides

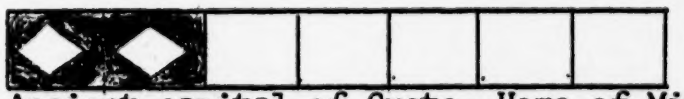
snperopeeh

One loved by Pluto

nopadar

One incapable of following directions

sssgnuo

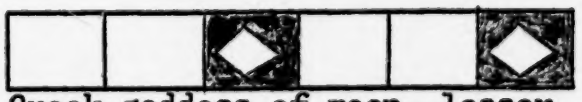


Ancient capital of Crete--Home of Minos

ecurlseh

Strong, hard worker

lseeen



Greek goddess of moon--lesser

Answers to Jumble Puzzles

(1) Bressies
Charon
Europa
Bacchus
Sirens
Key Word: Niobe

(2) Bellerphon
Narcissus
Gorgons
Tisiphone
Key Word: Antigone

(3) Hellen
Neptune
Parthenon
Orion
Socrates
Gimmericans
Key Word: Hippocrates

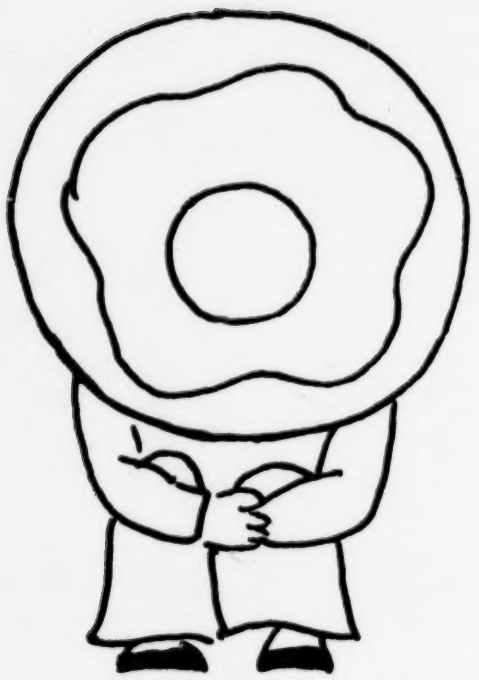
(4) Nox
Gods
Ajax
Momus
Hermes
Minos
Key Word: Agamemnon

(5) Eyes
Hercules
Vulcan
Epimetheus
Bellerophon
Key Word: Erysichthon

(6) Minerva
Erysichthon
Olympia
Pygmalion
Galatea
Antigone
Key Word: Mythology

(7) Medea
Jason
Cerebus
Ithaca
Rhodes
Pandarus
Key Word: Mediterranean Sea

(8) Furies
Persephone
Pandora
Gnossus
Hercules
Selene
Key Word: Golden Fleece



Español

SPANISH

Area: Foreign Language - 3rd - 6th grades

Number of Players: Two different teams

Materials Needed: Flash cards showing different objects or colors, numbers, etc.

Procedure: Each team has a captain, and a score keeper and a catcher. The game is based on baseball. There are nine innings. When one team is up to bat, the players for that team must give the correct answer first to get on base. The opposite team's player is called the catcher and attempts to answer first, also. If the catcher does answer first, that means a strike for the team up to bat, and so on. In case of a tie in answering, this is called a ball. Three correct answers by the catcher calls for three strikes and an out. For the team up to bat, four consecutive people answering correctly gives that team one run in.

Reference: Teacher Developed

Area: Foreign Language - 3rd - 6th grades

Number Game - "Aquí está"

How to: For practicing counting, this variation of "Hide the Thimble" is fun. Let one child leave the room while another one places a board eraser somewhere in the room in plain sight. Then the class calls, "Estamos listos" (we are ready), and a doorkeeper may open the door and say, "Pase usted." The one entering may say, "Gracias." If he has to pass very close to the doorkeeper in entering, he may add, "Con permiso." The doorkeeper may reply again, "Pase usted" or "¡como no!" (certainly).

As soon as this little conversation is finished, or on a signal from the leader, the class begins counting. In the beginning, they may need to count to 10 three or four times before the eraser is sighted, and a score may be kept in terms of 10's. The teacher may count the score by tens, thus introducing the need for higher numbers. Later, when the class has learned to count to 50, 60, or 100, the score may be kept by putting down the number the class was saying as the eraser was sighted. As soon as the eraser is sighted, the player may say "Aquí está."

This game can be varied for practicing the days of the week or the months of the year. The leader keeps track, on the board, of each repetition for the group of 7 or 12, and then may say, "It took Joan three weeks and four days to find the eraser."

It is also fun to count softly as the searcher is far away and louder as he nears the eraser.

Reference: "Teaching Spanish in the Grades," by Margit W. MacRae.

SPANISH

Area: Foreign Language - 3rd - 6th grades

Vocabulary Game - "¿Quien es el criminal?"

How to: This game is also known as "El Detective." It is fun to play after the children are very familiar with colors, articles of clothing, and physical characteristics. The children will have been able to describe each other, pictures, and themselves in terms of:

"Tengo el pelo negro. Tengo los ojos negros. Llevo un vestido azul, calcetines azules, y zapatos negros."

If the pattern is formed beginning with the head and following in sequence down to the feet, confusion will be avoided for the youngsters who know their colors but are not quite sure of all the items in the vocabulary of clothing and physical characteristics.

To play the game, one child is sent out of the room. He is the detective. While he is gone, you and the class select the criminal. It is a good plan to have him come to the front of the room so that his description can be carefully noted and remembered; otherwise, to look at "el criminal" to check the color of his shirt while being questioned by the detective will give the answer away. Everyone questioned by the detective must answer truthfully except el criminal, who may answer as he pleases.

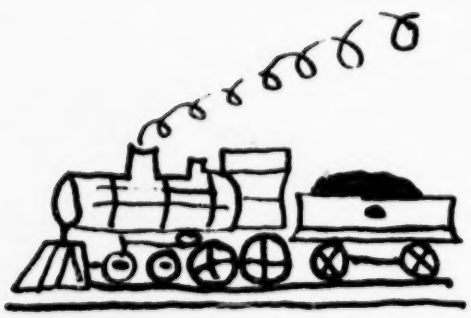
The detective may either ask questions that can be answered by "si" or "no," or may ask,

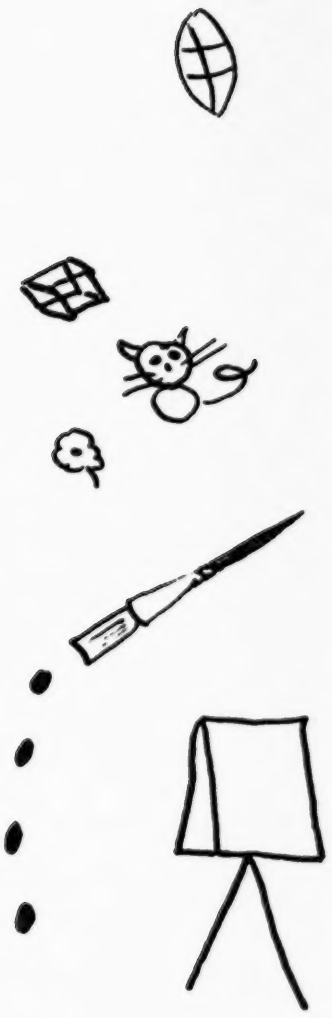
"¿De que color is el pelo de esta persona?" "¿De que color son los ojos?" "¿De que color es el vestido?" and etc.

To make the game move smoothly, each criminal may in turn become detective after he is discovered. Then no new detective will need to be chosen during the game.

This game may be played before the whole class is at ease with the vocabulary involved, but is best played for enjoyment and fluency after several simpler games and experiences have made the boys and girls entirely familiar with the words they will need.

Reference: "Teaching Spanish in the Grades," by Margit W. MacRae.





Social Studies and Art

Area: Social Studies, Reading

Grade Level: 4th - 8th grades

Number of Players: Different members of the class at varied times

Materials Needed: Dictionary

Stump the Class

Procedure: Children write down new words they come across in their readers or Social Studies books, etc. Children look up the meaning of these words and read the meaning out loud. The child who can identify the meaning with the correct word is the winner and has a turn.

Area: Social Studies

Grades Level: Lower grades

Purpose: To re-inforce learning capitols of States (or can be used with countries)

Materials: Paper and pencil

Capitol Bingo

Procedure: Either ditto form or have children draw on paper a large square containing seven columns and seven rows. At random, they write the name of a State in each square. (Since there are only forty-nine squares, they may leave out one state or consider only the continental states, thus leaving one square, preferably the center, "FREE".

When the teacher calls out the name of a capitol, the student writes it in the same square with the name of the state to which it belongs.

Before playing, decide whether one must fill two, three, or what number of rows to win "Bingo", or go for "blackout".

References: Teacher Developed

Area: Social Studies - 4th grade and up - MAP GAME

Objective: To become familiar with and to use maps. To apply reasoning from previously acquired knowledge.

Procedure:
1. Study the geographical effects of a country upon the people who are settling and building within it.

2. Take a topographical map of a foreign country which is apt to be unfamiliar to most of the children.

(continued on Page 76)

MAP GAME...cont'd

3. Judge from the conditions of the landscape where people would settle and where towns and cities would develop.

4. The children have been informed of the climate and natural resources of the country in question.

5. After the children have made their guesses, a population map of the same country is examined.

6. Often the children guess correctly. Where they are mistaken, examine the reasons why.

7. Variations of this game would be to take a map of another state, and have the children try to determine where the railroad, roads, and airlines might go. Then check against transportation route maps.

Reference: "Tested Activities for Your Classroom," F. A. Owen Publishing Company, Dansville, N.Y., 1957.

Area: Art

Grade Level: 1st - 6th grades

Purpose: To stimulate inagination, increase listening ability, and hand, eye, ear coordination.

Crazy Art

Procedure: A record is played which has many different moods or many different instrumental solos. A large piece of drawing paper, ruler and crayons are passed to each child. When the record is turned on, the children start drawing whatever they think they hear in the music. Everyone must sketch in a small part of the whole drawing. At the end of 30 seconds (or 30 taps of the ruler against the desk), time is called and each child immediately passes his paper forward to the person in front of him. The person in the front seat of each row takes his paper to the person in the back. Papers are passed once for each child in the row. No drawing is the result of the efforts of an individual but, rather, of his row.

Reference: Teacher Developed